

Fishery Management Report No. 10-28

Kodiak Management Area Salmon Escapement and Catch Sampling Results, 2009

by

M. Birch Foster

June 2010

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative Code	AAC	fork length	FL
deciliter	dL	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	mideye to fork	MEF
gram	g			mideye to tail fork	METF
hectare	ha			standard length	SL
kilogram	kg			total length	TL
kilometer	km	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.		
liter	L		@		
meter	m	at			
milliliter	mL	compass directions:			
millimeter	mm	east	E		
		north	N		
		south	S		
		west	W		
		copyright	©		
		corporate suffixes:			
		Company	Co.	alternate hypothesis	H _A
		Corporation	Corp.	base of natural logarithm	e
		Incorporated	Inc.	catch per unit effort	CPUE
		Limited	Ltd.	coefficient of variation	CV
		District of Columbia	D.C.	common test statistics	(F, t, χ^2 , etc.)
		et alii (and others)	et al.	confidence interval	CI
		et cetera (and so forth)	etc.	correlation coefficient (multiple)	R
		exempli gratia		correlation coefficient (simple)	r
		(for example)	e.g.	covariance	cov
		Federal Information Code	FIC	degree (angular)	°
		id est (that is)	i.e.	degrees of freedom	df
		latitude or longitude	lat. or long.	expected value	E
		monetary symbols		greater than	>
		(U.S.)	\$, ¢	greater than or equal to	≥
		months (tables and figures): first three letters	Jan,...,Dec	harvest per unit effort	HPUE
		(U.S.)	®	less than	<
		United States	™	less than or equal to	≤
		(adjective)	U.S.	logarithm (natural)	ln
		United States of America (noun)	USA	logarithm (base 10)	log
		U.S.C.	United States Code	logarithm (specify base)	log _b , etc.
		U.S. state	use two-letter abbreviations (e.g., AK, WA)	minute (angular)	'
				not significant	NS
				null hypothesis	H ₀
				percent	%
				probability	P
				probability of a type I error (rejection of the null hypothesis when true)	α
				probability of a type II error (acceptance of the null hypothesis when false)	β
				second (angular)	"
				standard deviation	SD
				standard error	SE
				variance	
				population	Var
				sample	var

FISHERY MANAGEMENT REPORT NO. 10-28

**KODIAK MANAGEMENT AREA SALMON ESCAPEMENT AND
CATCH SAMPLING RESULTS, 2009**

by

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ABSTRACT

Roughly 1.1 million sockeye salmon *Oncorhynchus nerka* were enumerated through Alaska Department of Fish and Game (ADF&G) salmon counting weirs in the Kodiak Management Area (KMA) during 2009. Adult sockeye salmon were sampled for age, sex, and length on river systems in the KMA and scale samples were taken from approximately 11 thousand salmon to represent escapement age compositions. The overall estimated sockeye salmon escapement was predominantly composed of age-2.2 (31.5%), -3.2 (24.2%) and -1.3 (13.0%) fish, but primary age classes varied by system.

The 2009 commercial salmon catch for the KMA totaled roughly 30.6 million fish, the highest total since 2006. The commercial harvest consisted of approximately 7 thousand Chinook *O. tshawytscha*, 1.7 million sockeye, 290 thousand coho *O. kisutch*, 27.6 million pink *O. gorbuscha*, and 960 thousand chum *O. keta* salmon. Sockeye salmon were sampled by ADF&G for age determination from a variety of catch areas throughout the KMA and of these samples, roughly 12 thousand scales were used to represent a combined harvest of approximately 975 thousand sockeye salmon. The overall sampled sockeye salmon catch was predominantly composed of age-2.2 (40.5%), -1.3 (23.6%) and -2.3 (14.8%) fish; however, primary age classes varied by section and district.

Sockeye salmon brood tables were updated for the Karluk, Ayakulik, Upper Station, and Frazer systems; 10-year average return-per-spawner estimates ranged from 1.6 for Ayakulik to 2.6 for Upper Station early run. The examination of historical trends in sockeye salmon age compositions show tremendous variability within and among systems.

Key words: Kodiak, escapement, sockeye salmon, commercial harvest, age, historical trends.

INTRODUCTION

The Kodiak Management Area (KMA) encompasses western Gulf of Alaska waters surrounding the entire Kodiak Archipelago in addition to the waters along that portion of the Alaska Peninsula from Cape Douglas to Kilokak Rocks (Figure 1). There are about 800 anadromous salmon systems identified in the KMA (Johnson and Klein 2009). These systems combined support five commercially important salmon species: Chinook *Oncorhynchus tshawytscha*, sockeye *O. nerka*, coho *O. kisutch*, pink *O. gorbuscha*, and chum *O. keta* salmon. About 39 of these systems support various sizes of sockeye salmon runs (Dinnocenzo 2010).

Weirs operated by the Alaska Department of Fish and Game (ADF&G) provide the primary mode of enumeration for virtually all Chinook salmon and a majority of the sockeye salmon escapements into KMA streams (Figure 2; Caldentey 2009). Remaining streams are monitored by aerial and foot surveys to index pink, chum, coho, and remaining sockeye salmon escapements (Dinnocenzo 2010).

The KMA is composed of seven commercial salmon fishing districts and 56 sections (Figures 1 and 3–6). The primary emphasis of the ADF&G salmon management program is to promote maximum production for future KMA salmon returns by supporting salmon escapement of sufficient magnitude and distribution (Wadle 2009). Simultaneously, the goal is to provide for orderly fisheries, maximize harvest opportunities and product quality, and adhere to management plans adopted by the Alaska Board of Fisheries (BOF). Five species of salmon are commercially harvested within the KMA, all of which have established escapement goals. The targeted escapement goals for KMA salmon are approximately: 8 thousand to 17 thousand Chinook, 750 thousand to 1.7 million sockeye, 2.3 million to 5.8 million pink, 6 thousand to 14 thousand coho (on the Kodiak town road system streams only), and 300 thousand chum salmon (Honnold et al. 2007; Nelson et al. 2005). Directed commercial fisheries occur on sockeye, pink, chum, and coho salmon; Chinook salmon are not targeted. To open and close the fishery in season, managers use qualitative analyses of run timing, CPUE statistics, species composition

estimates, regulatory management plans, aerial survey estimates, test fishery results, and weir escapement counts (Dinnocenzo 2010; Wadle 2009).

Age, sex, and length (ASL) composition of KMA sockeye salmon escapements have been collected under the direction of various researchers and agencies since the mid 1920s. The ADF&G, Commercial Fisheries Division (CFD), initiated an expanded catch and escapement sampling program in 1985 focusing on sockeye salmon. The purpose of this program was to collect representative ASL data from major sockeye salmon systems as well as representative age data from selected commercial sockeye salmon harvests. These data continue to expand the KMA salmon baseline ASL database. These samples are used to reconstruct numerous sockeye salmon runs, employing age marker analysis, scale pattern analysis (SPA), and historical harvest proportions to estimate specific stock contributions to commercial fisheries in the KMA (Baer and Honnold 2002; Barrett and Nelson 1994, 1995; Foster 2006-2009a; Nelson 1999; Nelson and Swanton 1996, 1997; Sagalkin 1999; Swanton 1992; Witteveen et al. 2005). Accordingly, these samples provide the foundation for preseason run forecasting and escapement goal evaluation.

This report is a summary of the results of the 2009 KMA salmon escapement and catch sampling program. This report is a compilation of data, with some interpretation and discussion but is not intended as a rigorous analysis. The emphasis of this report is on sockeye salmon.

METHODS

ADULT SALMON ESCAPEMENT AND CATCH ESTIMATES

Salmon escapement enumeration was accomplished via weir counts at seven systems throughout the KMA in 2009 (Figure 2). Major systems enumerated by ADF&G, CFD personnel included Karluk, Ayakulik (Red Lake), Frazer (Dog Salmon Creek), and South Olga Lakes (Upper Station). A weir was located at the mouth of Dog Salmon Creek and at the outlet to Frazer Lake (Frazer fish pass), within the same sockeye salmon system, to facilitate timely management of the fishery. Minor systems with weirs operated by ADF&G personnel included Afognak (Litnik) Lake, Saltery Lake, and Buskin River. Division of Sport Fish monitored salmon escapement through a weir at Buskin Lake and Lake Louise (within the Buskin River system) and Alaska State Parks operated a salmon weir at Big Bay Creek (Shuyak Island) in 2009 enumerating coho and pink salmon; however, the results of these smaller systems are outside the scope of this report which concentrates on sockeye salmon.

Escapements at weirs were enumerated by field technicians and biologists using hand tally denominators as fish migrated upstream through aluminum panel gates (Caldentey 2009). Gates are normally closed to allow fish buildup and are intermittently opened to allow salmon enumeration and passage. Therefore, these counts were treated as a census with minor adjustments made to the total counts only when high water events washed out weirs or after weir removal at season's end. In these cases, when escapements were not directly counted, they were estimated by aerial or foot surveys conducted by field personnel.

KMA salmon catch numbers for the 2009 season were obtained from summary reports of individual harvest receipts (fish tickets). The fish ticket database was edited by Kodiak area salmon management biologists prior to summary reports being generated on February 8, 2010.

ADULT SALMON ESCAPEMENT AND CATCH SAMPLING

Sockeye salmon escapements were sampled weekly for ASL data at weirs on the Karluk, Ayakulik, Upper Station, Dog Salmon, and Frazer river systems (Figure 2; Foster 2009b). Frazer

Lake salmon are initially enumerated at the Dog Salmon weir (near saltwater) and then counted again as they transit the fish pass and into Frazer Lake. Sampling weeks and dates are presented in Table 1. Fish were collected using a live-box trap attached to the upstream side of the weir. Ideally, three samples of 80 fish were collected weekly on alternating days to meet the required weekly sample size of 240 fish. Within-week adjustments were made in the schedule when necessary to obtain the full sample. The weekly escapement sample size enabled all age classes to be simultaneously estimated within \pm 6.5% of the true proportions with 90% confidence (Thompson 1987). For Afognak and Saltery lakes a goal of 600 fish (Table 2) was established, with the sampling effort distributed throughout the season and proportional to escapement counts (i.e., peaks in sampling effort occurred during peaks of escapement).

Designated commercial sockeye salmon catches were sampled weekly for age during commercial fisheries (Foster 2009b; Table 3; Figures 3-7). The catch sample size of 400 fish per week enabled all age classes to be simultaneously estimated within \pm 6.5% of the true proportion with 95% confidence (Thompson 1987). Consistent with weir sampling, 240 fish per week were sampled for ASL data from the Spiridon Bay Special Harvest Area (SBSHA) to represent the Spiridon Lake sockeye salmon run (Duesterloh 2008; Nelson and Swanton 1997).

Catch samples were collected at the Port of Kodiak, Larsen Bay, Alitak, Olga Bay, SBSHA, Foul Bay SHA, and Waterfall Bay SHA (Figures 2-7). The catch sampling crew obtained fish ticket information before collecting samples to determine if the fish were exclusively harvested from the section designated to be sampled. If fish ticket data were not available, the sampling crew interviewed the processing facility dock foreman or tender operator. Once fish ticket information became available, the origin of the catch was confirmed.

All scales, when possible, were collected from the preferred area of each fish following procedures outlined by the International North Pacific Fisheries Commission (INPFC 1963). Scales were mounted on scale “gum” cards and impressions were made on cellulose acetate (Clutter and Whitesel 1956). Fish ages were assigned by examining scale impressions for annual growth increments using a microfiche reader fitted with a 48X lens following designation criteria established by Mosher (1968). Ages were recorded on sampling forms using European notation (Koo 1962) in which a decimal separates the number of winters spent in fresh water (after emergence) from the number of winters spent in salt water. The total age of the fish includes an additional year representing the time between egg deposition and emergence of fry. Length measurements were taken from METF (mm) and sex was determined from external morphological characteristics. All ASL data were recorded on standard optical scanning (Opscan) data forms. All data forms were digitally scanned and edited for errors.

The ASL statistics were computed for each escapement sample. Age and sex composition were estimated daily by interpolating between sampling events, then summarized weekly. When limited sampling events occurred throughout the season and the targeted goals not achieved, the escapement age composition estimate was limited to the particular statistical week only. Length composition data were summarized by age and sex.

When weekly targeted catch sample sizes were obtained, total catch-at-age by area and day were estimated by multiplying the daily age composition of a particular sample by the daily catch from the corresponding catch area. Age composition of the catch from days not sampled was estimated using linear interpolation between sampling events. Descriptions of component programs used to compute ASL composition summaries can be found in database end user

documentation (Unpublished ADF&G Commercial Fisheries Division database documentation obtained from Jim Blackburn 1999, Kodiak, Alaska).

Sockeye Salmon Run Reconstruction Estimates

Spiridon Lake

The majority of Spiridon-bound sockeye salmon are assumed to be harvested within the SW Afognak Section and the NW Kodiak District. The calculated average estimated proportion of Spiridon sockeye harvest occurring in the SBSHA from 1994-1997 (41% using SPA) was used to estimate the number of Spiridon Lake sockeye salmon harvested in the SW Afognak Section and NW Kodiak District combined (Nelson 1999) from 1998 to 2007.

With the unusual Kodiak Management Area (KMA) Central Section commercial salmon fishing time and harvest, and the low Karluk Lake sockeye abundance during the 2008 and 2009 season, research staff were concerned about the utility of using the standard Spiridon run reconstruction method (described above) that was developed under a different fishery climate and broodstock. Therefore, a SPA (visual only, due to budget and time constraints) was conducted of the Uyak and Uganik (Westside) commercial sockeye scale samples. From 7 June through early August, roughly 5,000 individual scales from the commercial harvests in Uyak and Uganik were assessed for the presence of the unique 2009 Spiridon age-2.2 scale pattern, similar to the method used in 2008. Results were compared to the stock separation SPA conducted from 1994-1997 and 2008 (Nelson and Barrett 1994; Nelson and Swanton 1996-1997; Nelson 1999; Foster 2008, 2009) to gauge the validity of the analysis.

This Spiridon-bound Westside catch estimate was combined with the SBSHA sockeye salmon catch to estimate the size of the 2009 Spiridon Lake run. This enhanced run was fully utilized; therefore, there was no escapement. The age composition of the SBSHA commercial harvest samples was applied to the total Spiridon Lake run to estimate the age structure of the run.

Karluk Lake Early Run

The majority of Karluk sockeye salmon are assumed to be harvested within the NW and SW Kodiak Districts. A natural age marker (age 3.) was used to estimate the number by age class of sockeye salmon bound for Karluk Lake that were harvested in the westside Kodiak commercial fishery (Witteveen et al. 2005). Early- and late-run numbers were estimated separately.

The number of Karluk Lake bound sockeye salmon harvested in the Central, Inner and Outer Karluk and Sturgeon sections through 15 July was estimated following the methods described in Barrett and Nelson (1995). The total Karluk Lake early-run estimate was calculated by summing the escapement (through 21 July) and assigned catch numbers by age class. Estimates by age class were assigned to the parent year (brood year) escapement and return-per-spawner (R/S) estimates were calculated by dividing annual returns by respective parent year escapements.

Karluk Lake Late Run

The number of Karluk Lake bound sockeye salmon harvested in the Central, Inner and Outer Karluk, and Sturgeon sections post 15 July were estimated following the methods described in Barrett and Nelson (1995). The total Karluk late-run estimate was determined by summing the escapement (post 21 July) and assigned catch numbers by age class. Estimates by age class were assigned to the parent year (brood year) escapement and R/S estimates were calculated by dividing annual returns by respective parent year escapements.

Ayakulik River (Red Lake)

The majority of sockeye salmon bound for Ayakulik are assumed to be harvested within the SW Kodiak District. Historically, the Ayakulik run reconstruction was accomplished by combining the Ayakulik River weir sockeye salmon escapement, 90% of the total Inner and Outer Ayakulik sections sockeye salmon catch, and roughly one third of the Halibut Bay Section sockeye salmon catch for the period from 21 June through 1 August by age class (Witteveen et al. 2005). Due to the age composition and timing of the Ayakulik-Halibut Bay catch samples, 100% of the Ayakulik and 33% of the Halibut Bay sections catch were used to estimate the commercial catch attributable to the 2009 Ayakulik sockeye salmon run. These percentages are identical to what were used in 2007 and 2008. Estimates by age class were assigned to the parent year (brood year) escapement and R/S estimates were calculated by dividing annual returns by respective parent year escapements. Although the Ayakulik sockeye salmon run reconstruction and brood tables are not separated into early- and late-run components, historically (prior to 1989) the run was treated as such. Thus, the 2009 Ayakulik age and sex composition tables contained in this report are separated into early and late components for comparative purposes.

Frazer Lake (Dog Salmon Creek)

The majority of sockeye salmon bound for Frazer Lake are assumed to be harvested in the Alitak District. Run timing of Frazer Lake (Dog Salmon Creek) sockeye salmon coincides with both the early and late sockeye salmon runs to Upper Station (Sagalkin 1999) and therefore run reconstructions for both are done in conjunction. Based on previous studies (Swanton 1992, Tyler et al. 1986), 80% of the catch in the Cape Alitak and Humpy-Deadman sections and 95% of the catch in the Alitak, Moser, and Olga Bay sections were assumed to be of either Frazer Lake or Upper Station origin (Witteveen et al. 2005). The Frazer Lake catch estimate was based on a weekly proportion (using a running 3-day average) of Frazer/Upper Station harvest proportion escapement on 80% of the Cape Alitak Section harvest and 95% of the Alitak, Moser, and Olga Bay sections harvest. The Frazer/Upper Station estimate by week was used for catch by age unless the age class was exclusive to a system; this was based on scale samples collected weekly from the gillnet harvest. The differences between Frazer and Upper Station travel time between gillnet harvest and escapement were accounted for in the analysis (Foster 2003), as were the presence of jacks. The catch estimate for Frazer Lake, by age class, was added to escapement counted at the Dog Salmon Creek weir (based on age classes sampled at Frazer). Total run estimates by age class were assigned to the parent year (brood year) escapement and R/S estimates were calculated by dividing annual returns by respective parent year escapements.

South Olga Lakes (Upper Station) Early Run

The South Olga Lakes system (colloquially referred to as Upper Station) is known to have an early- and late-run sockeye salmon component (based on run timing) and each component was estimated separately in 2009.

Upper Station early-run sockeye salmon are generally harvested along with the Frazer Lake run in the Alitak District during June and early July. The early-run catch estimate was based on a weekly proportion of Frazer/Upper Station escapement differences as described above for the Frazer Lake run reconstruction through 15 July. Total run estimates by age class were assigned to the parent year (brood year) escapement and R/S estimates were calculated by dividing annual returns by respective parent year escapements.

South Olga Lakes (Upper Station) Late Run

The number of Upper Station late-run sockeye salmon harvested in the Alitak District after 15 July were estimated in an identical fashion as the early run until August 22. All harvest in the Alitak District after August 22 (week 34) was attributed to Upper Station. The total Upper Station late-run estimate was determined by summing escapement counts post 15 July from the Upper Station weir and assigned catch numbers by age class. Estimates by age class were assigned to the parent year (brood year) escapement and R/S estimates were calculated by dividing annual returns by respective parent year escapements.

BROOD TABLES AND HISTORICAL TRENDS

All run reconstruction estimates were used to update their respective brood tables. Reliable and consistent run reconstruction data for Karluk Lake only date back to 1985 run year; however reliable data for Ayakulik River, Upper Station, and Frazer Lake date back to the early 1970s. Annual trends in freshwater and saltwater ages of sockeye salmon, by run year, were graphed for visual interpretation.

RESULTS

ADULT SALMON ESCAPEMENT ABUNDANCE, AGE, SEX, AND SIZE DATA

A total of 1,067,329 individual sockeye salmon were estimated as escapement through seven weirs in the KMA during 2009 (Tables 4 and 5); this figure accounts for the 101,845 fish enumerated at Frazer fish pass that were originally counted through Dog Salmon weir. A total of 10,825 of the escapement scale samples were ageable, representing a combined escapement of 1,027,569 sockeye salmon (Table 6), not including the duplicated counts at the Frazer Lake fish pass. To ameliorate report reading hereafter, all estimates of age composition will be rounded to the nearest percent. In its entirety, the escapement was roughly composed of 5- (46%), 6- (34%) and 4- (16%) year-old fish. Primary age classes varied by system and area, but major overall age classes were 2.2 (32%) and 3.2 (24%), followed by smaller percentages of age-1.3, -1.2 and -2.3 (Table 6). Individual age, length, and sex composition summaries by escapement area are presented in Tables 7 through 34.

On Afognak Island, age-1.3 (48%) and -1.2 (40%) sockeye salmon dominated Afognak Lake escapement (Table 7). On the westside of Kodiak Island, escapement to Karluk Lake were dominated by age-2.2 (24%), -3.2 (23%) and -2.3 (22%) sockeye salmon in the early run (Table 10), and by age-3.2 (82%) sockeye salmon in the late run (Table 13). On the SW end of Kodiak Island, escapement to Ayakulik River were dominated by age-2.2 (35%), -1.2 (33%) and -1.3 (20%) sockeye salmon in the early run (Table 15), and by age-2.2 (46%), -2.3 (17%) and -1.2 (15%) sockeye salmon in the late run (Table 18). In the Alitak District, escapement to Upper Station were dominated by age-2.2 (41%) and -1.3 (35%) in the early run (Table 20), and by age-2.2 (74%) and -2.1 (10%) sockeye salmon in the late-run (Table 23). Escapement to Frazer Lake were dominated by age-2.2 (33%), -2.3 (20%) and -1.3 (19%) sockeye salmon (Table 25). On the eastside of Kodiak Island, escapement to Saltery Lake was dominated by age-1.3 (50%), -2.2 (22%) and -2.3 (18%) sockeye salmon (Table 28).

In 2009, for all ages combined, average body size of sockeye salmon was largest at Saltery Lake (554 mm; Table 29) and smallest at Karluk in the early run (490 mm; Table 11). For age-2.2, average body size was largest at Upper Station (late run) and smallest for the early runs at Karluk

and Afognak (Tables 33-34). Sex percentages of sockeye salmon escapement samples ranged from 61% female at Frazer (Table 27) to 41% female at Karluk early run (Table 12).

The age composition of Kitoi Bay hatchery chum salmon broodstock samples were predominately age-0.3 (63%), -0.2 (26%) and -0.4 (11%) (Table 31); however, broodstock samples were evenly distributed between male and female instead of random and thus should not be viewed as representative of the run. Average size of age-0.3 Kitoi Bay broodstock chum salmon sampled was roughly 566 mm for both males and females (Table 32).

COMMERCIAL SALMON CATCH ABUNDANCE AND AGE DATA

The 2009 commercial salmon catch in the KMA totaled 30,632,154 fish consisting of 7,268 Chinook, 1,727,776 sockeye, 291,470 coho, 27,649,826 pink, and 955,814 chum salmon (Tables 35 and 36). To most accurately represent run strength, these numbers include test fish harvests and personal use fish retained from commercial catch. The 2009 overall salmon harvest was greater than the recent 10-year (1999–2008) average of 23.3 million fish, due mostly to the strong return of pink salmon. The greatest district harvest of commercial sockeye salmon occurred within the Alitak District, followed by the Northwest Kodiak and Afognak districts (Table 36).

During the 2009 season, harvested sockeye salmon were sampled (11,953 ageable scales) and used to represent the commercial catch from a variety of catch areas throughout the KMA (Table 37). These samples were used to represent a combined catch of nearly one million sockeye salmon (Table 37). The overall sockeye salmon catch was predominantly composed of age-2.2 (41%), -1.3 (24%), and -2.3 (15%) fish; however, primary age classes varied by section and district. Individual age, length, and sex composition summaries by catch are presented in Tables 38 through 47.

Uganik-Viekoda bays commercial sockeye salmon catch were predominately age-1.3 (32%), -2.2 (26%) and -2.3 (20%) fish (Table 38). Commercial harvests in Uyak Bay were predominantly composed of age-2.2 (30%), -1.3 (22%), -2.3 (20%) and -3.2 (16%) sockeye salmon (Table 39).

The Spiridon Bay Special Harvest Area (SBSHA) catch was predominantly composed of age-1.3 (49%), -2.2 (21%), and -1.2 (20%) sockeye salmon (Table 40). On average, the sampled SBSHA sockeye salmon measured 553 mm in length (Table 41) and the estimated percentage of females in the SBSHA catch was about 53% (Table 42). The commercial sockeye salmon catch from Foul Bay SHA was predominantly age-1.3 (42%) and age-1.2 (36%), with females constituting about 50% of the catch. Sockeye salmon catch from Waterfall Bay SHA were predominantly age-1.2 (79%) fish, with females making up about 53% of the catch. (Table 43). On average, sockeye salmon sampled at Foul Bay SHA measured 504 mm while Waterfall Bay SHA sockeye salmon measured 503 mm (Table 44).

Southwest Kodiak District (Ayakulik and Halibut Bay sections) commercial sockeye salmon catch from late July and early August was dominated by age-2.2 (62%) and -1.2 (18%) fish (Table 45). The inside gillnet areas of Alitak Bay, Moser Bay, and Olga Bay sections showed catch samples that were predominantly composed of age-2.2 (54%), -1.3 (17%), and -2.3 (12%) sockeye salmon (Table 46).

The only chum salmon harvest scale samples were taken in the Kitoi Bay Section, where the catch was predominately age-0.3 (73%) followed by -0.2 (16%) and -0.4 (11%) fish (Table 47).

SOCKEYE SALMON RUN RECONSTRUCTION ESTIMATES

Spiridon Lake

A total of 81,725 sockeye salmon were commercially harvested in the SBSHA during 2009 (Table 48). An average estimate of 41% (ranging from 33% to 45%) of Spiridon Lake bound sockeye salmon were harvested in the SBSHA from 1994–1997 (Nelson 1999); updating that analysis in 2008 resulted in an estimate of 67%. Using a SPA method in 2009 (visual), an estimated 53% of the Spiridon Lake bound sockeye salmon were harvested in the SBSHA. The 2009 results yield a total harvest of 73,300 Spiridon Lake sockeye salmon in the Southwest Afognak Section and Northwest Kodiak District (not including the SBSHA) combined. The 2009 estimated Spiridon Lake run of 155,025 sockeye salmon was well below the estimated 10-year (1999–2008) average of 276,862 sockeye salmon (Figure 8). Roughly half (75,395 fish) of the total estimated Spiridon Lake run were age-1.3 followed by equal proportions of age-1.2 and -2.2 (~20%; Table 48).

Karluk Lake Early Run

The 2009 Karluk Lake early sockeye salmon run estimate of 68,852 was predominantly composed of age-2.2 (25%), -3.2 (23%) and -2.3 (23%) fish (Table 49). The estimated 2009 Karluk early run escapement was at its lowest level since 1971, and the run was far below the recent 10-year average (1999–2008) of 566,395 fish (Figure 9). The 1992 through 2001 Karluk early-run sockeye salmon escapements have produced an estimated average return of 593,321 fish (range: 241,483–854,229) with an average R/S estimate of 2.2 (Table 50).

Karluk Lake Late Run

The Karluk Lake late sockeye salmon run was estimated to be 329,783 fish in 2009 (Table 51). Age-3.2 fish were predominant (82%). The estimated 2009 run was more than the 2008 run of 294,886 but well below the recent 10-year average (1999–2008) estimated run of 815,938 fish (Figure 10). The 1992 through 2001 Karluk Lake late-run sockeye salmon escapements have produced an estimated average return of 849,067 fish (range: 332,669–1,204,530) with an average R/S estimate of 2.0 (Table 52).

Ayakulik River (Red Lake)

The 2009 estimated Ayakulik sockeye salmon run totaled 385,772 fish, with age-2.2 (43%) and -1.2 (26%) fish accounting for the majority of the run (Table 53). The 2009 estimated Ayakulik run was more than the 2008 run of 244,428 but just below the recent 10-year average (1999–2008) of 395,382 fish (Figure 11). The 1993–2002 Ayakulik sockeye salmon escapements have produced an estimated average return of 497,126 fish (range: 91,802–1,454,921) with an average R/S of 1.6 (Table 54).

Frazer Lake (Dog Salmon Creek)

The 2009 Frazer Lake sockeye salmon run estimate of 474,976 (Table 55) was predominantly composed of age-2.2 (42%), -1.3 (19%) and -2.3 (17%) fish. The 2009 run was less than the 2008 estimated run (520,603), but above the recent 10-year average (1999–2008) of 372,458 fish (Figure 12). Frazer Lake sockeye salmon escapements from 1993–2002 have produced an estimated average return of 377,357 fish (range: 53,837–867,981) with an average R/S estimate of 2.1 (Table 56).

South Olga Lakes (Upper Station) Early Run

The 2009 Upper Station early sockeye salmon run estimate of 81,208 was predominantly composed of age-2.2 (40%) and -1.3 (32%) fish (Table 57). This estimated run was less than the 2008 run of 99,192 fish and below the 10-year average (1999–2008) of 112,146 sockeye salmon (Figure 13). The 1993–2002 Upper Station early sockeye salmon escapements have produced an estimated average return of 113,345 fish (range: 19,289–254,768; Table 58) with an average R/S of 2.6.

South Olga Lakes (Upper Station) Late Run

The 2009 Upper Station sockeye salmon late-run estimate of 349,139 fish was predominantly composed of age-2.2 (73%) fish (Table 59). The 2009 estimated run was less than the 2008 estimated run (422,721) but above the recent 10-year average (1999–2008) of 321,591 fish (Figure 14). Upper Station late-run salmon escapements from 1993–2002 have produced an estimated average return of 335,758 fish (range: 110,971–497,539) with an average R/S estimate of 1.8 (Table 60).

KODIAK SOCKEYE SALMON HISTORICAL TRENDS IN AGE AND SIZE

Karluk

Sockeye salmon freshwater residence time in Karluk Lake is typically 2 years but often will extend to 3 years (Kyle et al. 1988; Rounsefell 1958). Since 1985, freshwater-age-2 sockeye salmon have dominated the annual runs with the exception of the early 1990s when freshwater-age-3 fish spiked in abundance (Figure 15). Freshwater-age-3 fish, while not normally dominant since the inception of sampling for salmon age (1920s), have consistently have been an important part of the Karluk Lake early and late runs. Over the last 10 years freshwater-age-3 fish have normally composed over 20% of the annual run, but have increased in the early run over the last six years. In 2009, the Karluk Lake late-run freshwater-age-3 component was an unprecedented 90% (Figure 15).

Both early- and late-run Karluk Lake sockeye salmon typically spend two years in the ocean, making age-2.2 the dominant historical age class since the 1920s. Since 1985, saltwater-age-2 sockeye salmon have dominated both runs but are more numerous during the late run (Figure 16). There appears to be a 5- or 6-year cycle of saltwater-age-3 sockeye salmon which dominate the early run. The late run has historically had a lesser saltwater-age-3 component, yet during the last 10 years it has markedly increased. In 2009 the early and late run had low levels of saltwater-age-3 fish (Figure 16).

Average size of age-2.2 sockeye salmon at Karluk Lake has generally declined since the 1980s, but in 2009 the early run rebounded to the historical average of about 500 mm and the late run increased to 514 mm (Table 33 and Figure 17).

Ayakulik

Freshwater residence time for Ayakulik sockeye salmon has generally been 2 years but often they will migrate to the ocean after only 1 year in Red Lake, as indicated by age samples of the escapement (Foster 2009a). On average, freshwater-age-2 sockeye salmon have composed 66% of the run while freshwater-age-1 fish have composed 32%. In 2009, roughly 43% of the run was freshwater-age-1 and 55% freshwater-age-2 fish (Figure 15).

Ayakulik River sockeye salmon commonly spend two years in the ocean but frequently (~40%) rear at sea for three years. Similar to Karluk Lake, there is a 5- or 6-year cycle of increased proportions of saltwater-age-3 sockeye salmon (Figure 16). Keeping with the cycle, age composition estimates from the 2009 run show saltwater-age-2 (69%) to be peaking similar to the 2003 age structure.

In 2009 average size of age-2.2 and -2.3 sockeye salmon at Ayakulik was just below average for the early portion of the run but especially low for the late portion; similar to Karluk, Ayakulik has also generally declined since the 1980s (Tables 33-34 and Figure 17).

South Olga Lakes

Freshwater residence time for Upper Station early run sockeye salmon has typically been 2 years but often they will migrate to the ocean after only 1 year as indicated by age data from the escapement; in 2009 the proportions favored freshwater-age-2 fish in both the early run (60%) and the late run (83%). From the late 1980s to the mid 1990s, freshwater-age-2 fish were dominant in the early run but the late run demonstrated strong components of freshwater-age-0 (Figure 15) sockeye salmon and coincided with extremely large runs. Since the mid 1990s, the early run has shown strong components of both freshwater-age-1 and age-2 fish, whereas the late run has been strictly dominated by freshwater-age-2 fish.

Upper Station sockeye salmon typically spend two years in the ocean but occasionally rear at sea for three years. There is a possible 4- or 5-year cycle of increased proportions of saltwater-age-3 sockeye salmon in the early run (Figure 16). In 2009, the Upper Station early run showed roughly equal proportions of saltwater-age-2 and age-3 fish; the late run however continued its trend of predominantly saltwater-age-2 fish in the run (80%; Figure 16).

In 2009, the average size of age-2.2 and -2.3 sockeye salmon in both the early and late runs at Upper Station was larger than the historical average (Tables 33-34 and Figure 17).

Frazer

Freshwater residence time for Frazer Lake sockeye salmon has typically been 2 years but often they will migrate to the ocean after only 1 year (Barrett 1989; Foster 2009a; Sagalkin 1999). While freshwater-age-2 fish still dominate the annual runs, there has been an increasing proportion of freshwater-age-3 fish recently (Figure 15); whether this is a signal of decreasing lake productivity or simply the genetic influence of its Karluk Lake donor stock, or both, is unknown. In 2009, the Frazer Lake sockeye salmon showed strong components of freshwater-age-2, -1, and -3 fish (Figure 15).

Frazer Lake sockeye salmon commonly spend two years in the ocean but occasionally rear at sea for three years (Figure 16). There is not a consistent cycle similar to that of Karluk, Ayakulik, and Upper Station fish but one may be developing. In addition, proportions of saltwater-age-2 and-3 fish vary much more dramatically than the nearby native stocks, which is not surprising considering the recent colonization of this newly anadromous system. The last ten years have shown considerable increase in the abundance of saltwater-age-1 sockeye salmon (jacks) which have outnumbered the saltwater-age-2 and -3 fish during the 2003 and 2007 runs (Figure 16). The 2009 run was dominated by saltwater-age-2 (55%) and age-3 (42%) fish.

In 2009, average size of age-2.2 sockeye salmon at Frazer was the largest (527 mm) since standardized sampling began in 1985. (Table 33 and Figure 17).

Considering the short time that sockeye salmon have been naturally spawning in the lake, it is not surprising that the Frazer Lake fresh and saltwater-ages are, by far, the most wildly fluctuating of any major Westward Region sockeye salmon stock. The recent abundance of saltwater-age-1 sockeye salmon has raised concern in the Alitak Bay area. Although the majority of the Alitak Bay salmon catch since 1970 has been taken in a size-selective (larger) gillnet fishery (as opposed to purse seining), a similar abundance of early maturing sockeye salmon is not seen at the neighboring Upper Station system, which undergoes similar fishing pressure. Furthermore, jacks are not prevalent by any measure in the major donor stocks of Karluk and Ayakulik, suggesting that the jack increase in Frazer Lake is due not to fishery or genetic influence but to an aspect of the ecosystem in Frazer Lake that may be selective toward smaller fish.

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TABLES AND FIGURES

Table 1.—Sampling weeks and corresponding calendar dates, 2009.

Week	Calendar Dates	Week	Calendar Dates
10	1-Mar - 7-Mar	28	5-Jul - 11-Jul
11	8-Mar - 14-Mar	29	12-Jul - 18-Jul
12	15-Mar - 21-Mar	30	19-Jul - 25-Jul
13	22-Mar - 28-Mar	31	26-Jul - 1-Aug
14	29-Mar - 4-Apr	32	2-Aug - 8-Aug
15	5-Apr - 11-Apr	33	9-Aug - 15-Aug
16	12-Apr - 18-Apr	34	16-Aug - 22-Aug
17	19-Apr - 25-Apr	35	23-Aug - 29-Aug
18	26-Apr - 2-May	36	30-Aug - 5-Sep
19	3-May - 9-May	37	6-Sep - 12-Sep
20	10-May - 16-May	38	13-Sep - 19-Sep
21	17-May - 23-May	39	20-Sep - 26-Sep
22	24-May - 30-May	40	27-Sep - 3-Oct
23	31-May - 6-Jun	41	4-Oct - 10-Oct
24	7-Jun - 13-Jun	42	11-Oct - 17-Oct
25	14-Jun - 20-Jun	43	18-Oct - 24-Oct
26	21-Jun - 27-Jun	44	25-Oct - 31-Oct
27	28-Jun - 4-Jul	45	1-Nov - 7-Nov

Table 2.—Kodiak Management Area sockeye salmon escapement sampling schedule, 2009.

System Sample Location	Crew Supervision	Stream No.	Sampling Frequency	Date		Sample Size
				Starting	Ending	
<i>Major Systems</i>						
Karluk River weir	G. Spalinger	255-10-101	3 times per week	25-May	30-Sep	240 (weekly total)
Ayakulik River weir	G. Spalinger	256-15-201	3 times per week	1-Jun	15-Aug	240 (weekly total)
Upper Station weir	J. Dinnocenzo	257-30-304	3 times per week	25-May	30-Sep	240 (weekly total)
Frazer Lake fish pass	R. Baer	257-40-403	3 times per week	15-Jun	30-Aug	240 (weekly total)
<i>Minor Systems</i>						
Afognak (Litnik) Weir	R. Baer	252-34-342	Run-dependent	1-Jun	1-Aug	600 (season total)
Saltery Lake weir	S. Thomsen	259-41-415	Run-dependent	25-Jun	1-Aug	600 (season total)

Table 3.—Kodiak Management Area sockeye and chum salmon catch sampling schedule, 2009.

District	Geographic Area	Species	Statistical Area(s)	Primary Sampling Site	Crew Leader	Sample		
						Frequency	Dates	Size
Afognak District								
	Waterfall Bay SHA ^{a,b}	Sockeye	251-84	Waterfall Bay	Thomsen	seasonally	6/1 - 7/1	600
	Foul Bay SHA ^{a,b}	Sockeye	251-41	Foul Bay	Thomsen	seasonally	6/1 - 6/15	600
	Kitoi Bay SHA ^{a,b}	Chum	253-32	Kitoi Bay	Aro	seasonally	6/1-8/1	400
NW Kodiak District								
	Uganik Bay (incl. Kupreanof)	Sockeye	253-11 - 253-35	Kodiak	Moore	weekly	6/1 - 9/5	400
	Uyak Bay	Sockeye	254-10 - 254-40	Larsen Bay	Moore	weekly	6/1 - 9/5	400
	Spiridon Bay SHA/Telrod Cove ^c	Sockeye	254-50	Telrod Cove	Watchers	weekly	7/15 - 9/15	240
SW Kodiak District								
17	Inner/Outer Karluk Section	Sockeye	255-10 - 255-20	Larsen Bay	Moore	when available	6/1 - 9/5	400
	Sturgeon Section ^b	Sockeye	256-40	Kodiak	Moore	when available	6/23 - 8/1	400
	Halibut/Gurney Bay	Sockeye	256-25 - 256-30	Lazy Bay (Alitak)	Moore	when available	6/23 - 8/1	400
	Inner/Outer Ayaklik Section	Sockeye	256-10 - 256-20	Lazy Bay (Alitak)	Moore	when available	6/1 - 8/1	400
Alitak Bay District								
	Moser/Olga Bay	Sockeye	257-40 - 257-43	Olga Bay	Goodie	weekly	6/5 - 8/31	400

^a Waterfall, Foul, and Kitoi bays special harvest areas (SHA) typically collect 600 samples (400 chum) total; the frequency depends on the harvest magnitude.

^b Due to harvest magnitude, no samples were collected during the 2009 season.

^c Spiridon Bay SHA collected 240 fish per week (consistent with escapement sampling).

Table 4.—Daily and cumulative (cum.) sockeye salmon escapement counted through weirs by system, Kodiak Management Area, 2009.

Date	System (weir)													
	Afognak		Karluk		Ayakulik		Upper Station		Dog Salmon Creek		Frazer fish pass		Saltery	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
5/21	5	5												
5/22	15	20			0	0	0	0						
5/23	0	20	0	0	0	0	7	7						
5/24	11	31	0	0	0	0	8	15						
5/25	4	35	0	0	1	1	89	104						
5/26	21	56	9	9	0	1	237	341	0	0				
5/27	1	57	0	9	0	1	315	656	0	0				
5/28	0	57	2	11	0	1	279	935	0	0				
5/29	10	67	0	11	3	4	93	1,028	0	0				
5/30	11	78	2	13	0	4	94	1,122	0	0				
5/31	6	84	37	50	2	6	170	1,292	0	0				
6/1	137	221	68	118	47	53	151	1,443	0	0				
6/2	10	231	40	158	1	54	96	1,539	0	0				
6/3	497	728	126	284	0	54	932	2,471	0	0				
6/4	1,523	2,251	256	540	1,785	1,839	155	2,626	0	0				
6/5	1,840	4,091	123	663	168	2,007	2,410	5,036	0	0				
6/6	866	4,957	41	704	397	2,404	6,520	11,556	2	2				
6/7	407	5,364	4,592	5,296	3,591	5,995	1,998	13,554	2	4				
6/8	452	5,816	43	5,339	16	6,011	1,246	14,800	2	6	0	0		
6/9	314	6,130	1,603	6,942	11,210	17,221	2,878	17,678	2,738	2,744	0	0		
6/10	1,683	7,813	859	7,801	13,829	31,050	1,283	18,961	8,452	11,196	0	0		
6/11	50	7,863	2,981	10,782	1,149	32,199	971	19,932	2,168	13,364	31	31		
6/12	829	8,692	3,575	14,357	5,935	38,134	737	20,669	5,531	18,895	11	42		
6/13	823	9,515	3,064	17,421	15,777	53,911	1,319	21,988	1,380	20,275	12	54		
6/14	1,370	10,885	2,052	19,473	1,272	55,183	261	22,249	261	20,536	0	54		
6/15	771	11,656	3,096	22,569	9,067	64,250	345	22,594	1,699	22,235	26	80		
6/16	1,942	13,598	89	22,658	7,014	71,264	1,427	24,021	1,874	24,109	26	106		
6/17	859	14,457	136	22,794	841	72,105	1,063	25,084	5,374	29,483	1	107		
6/18	2,072	16,529	84	22,878	2,527	74,632	1,948	27,032	9,265	38,748	4	111		
6/19	1,034	17,563	50	22,928	10,634	85,266	875	27,907	4,285	43,033	9	120		
6/20	1,233	18,796	4,123	27,051	891	86,157	96	28,003	761	43,794	52	172		
6/21	992	19,788	11,164	38,215	11,697	97,854	587	28,590	0	43,794	37	209		
6/22	270	20,058	1,022	39,237	500	98,354	30	28,620	5	43,799	1,542	1,751		

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Table 4.–Page 2 of 4.

Date	System (weir)													
	Afognak		Karluk		Ayakulik		Upper Station		Dog Salmon Creek		Frazer fish pass		Saltery	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/23	247	20,305	17	39,254	10,816	109,170	95	28,715	1,428	45,227	90	1,841	0	0
6/24	189	20,494	1,961	41,215	11,758	120,928	144	28,859	6,811	52,038	1,017	2,858	141	141
6/25	62	20,556	970	42,185	4,292	125,220	649	29,508	1,321	53,359	9,060	11,918	517	658
6/26	2	20,558	1,741	43,926	2,592	127,812	1,921	31,429	2,211	55,570	240	12,158	1,033	1,691
6/27	88	20,646	258	44,184	4,208	132,020	525	31,954	11,359	66,929	2,105	14,263	531	2,222
6/28	923	21,569	1,273	45,457	4,510	136,530	315	32,269	12,270	79,199	1,149	15,412	482	2,704
6/29	1,789	23,358	632	46,089	9,814	146,344	326	32,595	1,329	80,528	13,414	28,826	246	2,950
6/30	160	23,518	79	46,168	3,501	149,845	190	32,785	3,395	83,923	782	29,608	315	3,265
7/1	75	23,593	2,060	48,228	333	150,178	526	33,311	1,844	85,767	2,078	31,686	148	3,413
7/2	270	23,863	1,712	49,940	4,636	154,814	90	33,401	123	85,890	1,003	32,689	331	3,744
7/3	33	23,896	33	49,973	1,850	156,664	21	33,422	2,126	88,016	595	33,284	486	4,230
7/4	22	23,918	5	49,978	7,167	163,831	15	33,437	2,646	90,662	161	33,445	154	4,384
7/5	389	24,307	106	50,084	8,116	171,947	316	33,753	2,257	92,919	6,947	40,392	360	4,744
7/6	30	24,337	831	50,915	274	172,221	266	34,019	598	93,517	4,711	45,103	460	5,204
7/7	3	24,340	1,121	52,036	1,076	173,297	111	34,130	5,365	98,882	230	45,333	1,592	6,796
7/8	8	24,348	130	52,166	1,791	175,088	25	34,155	251	99,133	240	45,573	1,575	8,371
7/9	2	24,350	6	52,172	1,521	176,609	58	34,213	552	99,685	90	45,663	1,282	9,653
7/10	12	24,362	8	52,180	6,132	182,741	45	34,258	1,180	100,865	344	46,007	1,194	10,847
7/11	88	24,450	104	52,284	2,979	185,720	5	34,263	3,053	103,918	2,002	48,009	370	11,217
7/12	14	24,464	158	52,442	7,228	192,948	43	34,306	362	104,280	467	48,476	406	11,623
7/13	20	24,484	3	52,445	50	192,998	178	34,484	3,319	107,599	371	48,847	587	12,210
7/14	95	24,579	11	52,456	3,627	196,625	92	34,576	1,047	108,646	398	49,245	867	13,077
7/15	112	24,691	10	52,466	4,023	200,648	9	34,585	2,422	111,068	3,176	52,421	955	14,032
7/16	186	24,877	228	52,694	552	201,200	20	34,605	856	111,924	16,036	68,457	234	14,266
7/17	76	24,953	4	52,698	4,596	205,796	44	34,649	2,155	114,079	1,364	69,821	445	14,711
7/18	77	25,030	0	52,698	10	205,806	1	34,650	488	114,567	679	70,500	722	15,433
7/19	17	25,047	3	52,701	2,614	208,420	0	34,650	1,490	116,057	340	70,840	1,157	16,590
7/20	9	25,056	97	52,798	4,835	213,255	9	34,659	2	116,059	885	71,725	1,234	17,824
7/21	2,682	27,738	0	52,798	3,803	217,058	457	35,116	2,919	118,978	135	71,860	3,154	20,978
7/22	471	28,209	5	52,803	53	217,111	2	35,118	243	119,221	232	72,092	255	21,233
7/23	1,299	29,508	3	52,806	0	217,111	11	35,129	20	119,241	419	72,511	430	21,663
7/24	26	29,534	5	52,811	15	217,126	10	35,139	394	119,635	6,918	79,429	2,433	24,096

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Table 4.–Page 3 of 4.

Date	System (weir)																									
	Afognak		Karluk		Ayakulik		Upper Station		Dog Salmon Creek		Frazer fish pass		Saltery													
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.												
7/25	222	29,756	1	52,812	31	217,157	400	35,539	1,776	121,411	2,427	81,856	3,661	27,757												
7/26	699	30,455	16	52,828	50	217,207	2,000	37,539	2,693	124,104	178	82,034	1,750	29,507												
7/27	27	30,482	152	52,980	38	217,245	1,922	39,461	5,221	129,325	37	82,071	850	30,357												
7/28	50	30,532	107	53,087	0	217,245	210	39,671	956	130,281	217	82,288	1,742	32,099												
7/29	59	30,591	68	53,155	30	217,275	2,495	42,166	11,481	141,762	82	82,370	2,340	34,439												
7/30	221	30,812	2	53,157	128	217,403	1,945	44,111	2,768	144,530	8,281	90,651	1,476	35,915												
7/31	63	30,875	713	53,870	18,004	235,407	6,131	50,242	181	144,711	839	91,490	1,628	37,543												
8/1	5	30,880	28	53,898	883	236,290	1,531	51,773	12	144,723	35	91,525	901	38,444												
8/2	13	30,893	187	54,085	19,480	255,770	287	52,060	443	145,166	61	91,586	1,522	39,966												
8/3	76	30,969	25	54,110	1,987	257,757	2	52,062	19	145,185	99	91,685	683	40,649												
8/4	330	31,299	584	54,694	28,569	286,326	100	52,162	302	145,487	7,049	98,734	1,772	42,421												
8/5	37	31,336	546	55,240	3,500	289,826	5	52,167	125	145,612	797	99,531	708	43,129												
8/6	22	31,358	24	55,264	300	290,126	661	52,828	27	145,639	33	99,564	435	43,564												
8/7		140	55,404	100	290,226	92	52,920	160	145,799	256	99,820	470	44,034													
8/8			14	55,418	68	290,294	233	53,153	40	145,839	163	99,983	594	44,628												
8/9				50	55,468	526	290,820	304	53,457	151	145,990	143	100,126	579	45,207											
8/10					146	55,614	23	290,843	57	53,514	2	145,992	104	100,230	448	45,655										
8/11						109	55,723	11	290,854	1,664	55,178	180	146,172	82	100,312	136	45,791									
8/12							45	55,768	1,554	292,408	9,691	64,869	141	146,313	512	100,824	800	46,591								
8/13								111	55,879	5,401	297,809	11,532	76,401	253	146,566	64	100,888									
8/14									10	55,889	3,603	301,412	9,298	85,699	82	146,648	14	100,902								
8/15										239	56,128	3,444	304,856	10,834	96,533	1,150	147,798	17	100,919							
8/16											11	56,139	748	305,604	14,506	111,039			72	100,991						
8/17												18	56,157	289	305,893	9,755	120,794			184	101,175					
8/18													18	56,175	1,691	307,584	2,665	123,459			220	101,395				
8/19													39	56,214	570	308,154	2,035	125,494			106	101,501				
8/20													41	56,255	411	308,565	695	126,189			344	101,845				
8/21													40	56,295	824	309,389	1,417	127,606								
8/22													18	56,313	15	309,404	1,792	129,398								
8/23														1,264	57,577	0	309,404	4,514	133,912							
8/24															68	57,645	182	309,586	5,390	139,302						
8/25															171	57,816	162	309,748	8,253	147,555						

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Table 4.–Page 4 of 4.

Date	System (weir)													
	Afognak		Karluk		Ayakulik		Upper Station		Dog Salmon Creek		Frazer fish pass		Saltery	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
8/26		58	57,874	9	309,757	5,063	152,618							
8/27		94	57,968	1,433	311,190	7,709	160,327							
8/28		33	58,001	408	311,598	1,588	161,915							
8/29		10,942	68,943	652	312,250	1,601	163,516							
8/30		1,191	70,134	179	312,429	1,983	165,499							
8/31		533	70,667	217	312,646	1,092	166,591							
9/1		195	70,862	26	312,672	5,652	172,243							
9/2		210	71,072	305	312,977	3,763	176,006							
9/3		424	71,496	1,186	314,163	1,825	177,831							
9/4		6,477	77,973	92	314,255	5,767	183,598							
9/5		18,023	95,996	56	314,311	3,775	187,373							
9/6		13,569	109,565	135	314,446	2,429	189,802							
9/7		433	109,998	64	314,510	1,203	191,005							
9/8		154	110,152	137	314,647	445	191,450							
9/9		782	110,934	110	314,757	436	191,886							
9/10		67	111,001	24	314,781	269	192,155							
9/11		153	111,154	128	314,909	2,369	194,524							
9/12		115	111,269	1	314,910	1,100	195,624							
9/13		69	111,338	134	315,044	301	195,925							
9/14		353	111,691	140	315,184	196	196,121							
9/15		2,413	114,104			200	196,321							
9/16		296	114,400											
9/17		30,495	144,895											
9/18		25,042	169,937											
9/19		1,373	171,310											
9/20		22	171,332											
9/21		75	171,407											
9/22		358	171,765											
9/23		29	171,794											
9/24		12	171,806											
9/25		29	171,835											
9/26		2,089	173,924											
9/27		77,489	251,413											
9/28		13,664	265,077											
9/29		65,000	330,077											
Totals	31,338	330,077	315,184	196,321	147,798	101,845	46,591							

Note: Post-weir escapement estimates are included for Karluk (9/29), Ayakulik (9/14), Upper Station (9/15), and Saltery (8/12).

Table 5.—Fish weir installation and removal dates and salmon escapements for the major systems with fish weirs in the Kodiak Management Area, 2009.

Weir Locations	Dates		Species ^a					Totals
	Installed	Removed	Chinook	Sockeye	Coho	Pink	Chum	
Karluk River	5/23	9/29	1,308	330,077	32,836	159,097	254	523,572
Ayakulik River	5/22	9/13	2,615	315,184	36,563	27,923	78	382,363
Dog Salmon Creek	5/26	8/15	127	147,798	46	26,705	1,212	175,888
Frazer Lake fish pass ^b	6/8	8/20	42	101,845	0	2	0	101,889
Upper Station	5/22	9/15	0	196,321	7,781	13,348	0	217,450
Afognak River	5/19	8/7	0	31,358	13	895	6	32,272
Saltery River	6/23	8/11	1	46,591	24	21,285	9	67,910
Totals			4,051	1,067,329	77,263	249,253	1,559	1,399,455

^a Counts include post weir estimates after weirs were removed.

^b Salmon counted at the Frazer fish pass were initially counted at Dog Salmon weir and all species, except sockeye, counted at Frazer are not included in totals. Since sockeye salmon that pass Dog Salmon weir but fail to get counted at Fazer fish pass may not spawn, the fish pass count is considered the best escapement estimate of sockeye salmon.

Table 6.—Estimated age composition of sockeye salmon escapements by system, Kodiak Management Area, 2009.

System	Sample Size	Age											Total	
		1.1	0.3	1.2	2.1	1.3	2.2	3.1	2.3	3.2	3.3	Other ^a		
Afognak Lake														
(Litnik)	776	Percent	4.6		40.2	2.8	47.5	2.2		2.7			100.0	
		Numbers	1,430		12,615	873	14,905	681		854			31,358	
Karluk Lake														
Early Run	1,028	Percent	0.0		8.5	2.4	1.3	24.0	8.6	22.3	23.0	6.0	3.8	100.0
		Numbers	0		4,483	1,257	704	12,673	4,546	11,786	12,169	3,148	2,032	52,798
Late Run	1,256	Percent	0.0		0.1	0.7	0.2	4.6	3.9	4.7	81.5	4.1	0.2	100.0
		Numbers	15		353	2,006	453	12,650	10,889	13,044	225,869	11,334	666	277,279
Ayakulik River														
Early Run	1,631	Percent	2.3	0.3	33.4	2.2	20.2	34.8		6.1	0.4		0.1	100.0
		Numbers	5,086	582	72,498	4,865	43,954	75,448		13,348	955		322	217,058
Late Run	832	Percent	3.5		14.9	6.4	10.1	46.0		17.1	1.4	0.2	0.5	100.0
		Numbers	3,470		14,596	6,269	9,868	45,121		16,802	1,341	199	460	98,126
Upper Station														
Early Run	1,446	Percent	0.8		3.7	8.8	34.8	41.1		10.2	0.2		0.3	100.0
		Numbers	269		1,289	3,037	12,047	14,217		3,526	86		113	34,585
Late Run	1,321	Percent	1.0	0.5	4.0	9.8	5.6	73.7	0.1	4.2	0.3		0.7	100.0
		Numbers	1,561	817	6,514	15,925	9,096	119,162	181	6,846	548		1,087	161,736
Frazer														
Fish Pass	1,953	Percent	0.1		9.0	4.4	18.7	33.3		19.8	7.7	6.6	0.5	100.0
		Numbers	78		9,150	4,448	19,055	33,929		20,183	7,805	6,732	466	105,363
Saltery Lake	582	Percent		2.3	6.1	0.4	50.4	22.1		17.8			0.8	100.0
		Numbers		1,069	2,857	172	23,495	10,289		8,313			396	49,266
Totals	10,825	Percent	1.2	0.2	12.1	3.8	13.0	31.5	1.5	9.2	24.2	2.1	0.5	100.0
		Numbers	11,910	2,468	124,354	38,851	133,576	324,170	15,616	94,704	248,773	21,413	5,542	1,027,569

^a The “Other” age class listed in the table above consists of age-0.1,-0.2,-0.4,-1.4,-4.1,-2.4,-4.2,-4.3, and -3.4.

Table 7.—Estimated age composition of Afognak Lake (Litnik) sockeye salmon escapement by week, 2009.

Week	Sample Size	Age							Total
		1.1	1.2	2.1	1.3	2.2	2.3		
21-22 5/17-5/30	0	Percent	0.0	11.7	0.0	84.7	0.9	2.7	100.0
		Numbers	0	9	0	66	1	2	78
23 5/31-6/06	111	Percent	0.3	13.4	0.1	82.7	0.9	2.7	100.0
		Numbers	14	653	3	4,034	42	133	4,879
24 6/07-6/13	173	Percent	2.3	28.0	0.6	65.9	0.6	2.6	100.0
		Numbers	104	1,275	29	3,004	27	119	4,558
25 6/14-6/20	223	Percent	5.6	52.1	1.7	38.9	0.4	1.3	100.0
		Numbers	519	4,832	159	3,612	36	123	9,281
26 6/21-6/27	49	Percent	14.1	61.2	4.2	18.8	0.0	1.7	100.0
		Numbers	261	1,132	78	347	1	32	1,850
27 6/28-7/04	95	Percent	7.7	67.5	8.2	16.3	0.1	0.2	100.0
		Numbers	252	2,209	268	535	3	5	3,272
28 7/05-7/11	0	Percent	6.6	57.9	7.7	25.0	1.6	1.3	100.0
		Numbers	35	308	41	133	8	7	532
29 7/12-7/18	0	Percent	5.7	44.2	6.7	37.0	3.6	2.9	100.0
		Numbers	33	256	39	214	21	17	580
30 7/19-7/25	100	Percent	4.5	34.2	5.4	45.0	6.0	4.8	100.0
		Numbers	214	1,618	256	2,127	286	225	4,726
31 7/26-8/01	25	Percent	0.0	20.0	0.0	52.0	16.0	12.0	100.0
		Numbers	0	225	0	584	180	135	1,124
32 8/02-8/08	0	Percent	0.0	20.0	0.0	52.0	16.0	12.0	100.0
		Numbers	0	96	0	249	76	57	478
Total	776	Percent	4.6	40.2	2.8	47.5	2.2	2.7	100.0
		Numbers	1,430	12,615	873	14,905	681	854	31,358

Table 8.—Length composition of Afognak Lake (Litnik) sockeye salmon escapement samples by age and sex, 2009.

	Age						
	1.1	1.2	1.3	2.1	2.2	2.3	Total
Females							
Mean Length (mm)	0	478	546	0	480	544	523
SE	-	4	2	-	17	8	3
Range	0-0	337-580	421-614	0-0	434-537	506-586	337-614
Sample Size	0	101	202	0	5	11	319
Males							
Mean Length (mm)	330	476	557	324	506	548	493
SE	4	3	3	5	19	17	4
Range	284-396	332-601	412-635	283-370	456-610	475-590	283-635
Sample Size	31	212	179	19	7	7	455
All Fish							
Mean Length (mm)	330	476	551	324	495	545	506
SE	4	2	2	5	13	8	2
Range	284-396	332-601	412-635	283-370	434-610	475-590	283-635
Sample Size	31	313	381	19	12	18	774

Table 9.—Estimated sex composition of Afognak Lake (Litnik) sockeye salmon escapement by week, 2009.

Week	Dates	Sample Size			Percent			Escapement		
		Females	Males	Total	Females	Males	Females	Males	Total	
21-22	5/17-5/30	0	0	0	38.3	61.7	30	48	78	
23	5/31-6/06	46	74	120	38.8	61.2	1,893	2,986	4,879	
24	6/07-6/13	80	110	190	41.9	58.1	1,911	2,647	4,558	
25	6/14-6/20	104	136	240	42.1	57.9	3,904	5,377	9,281	
26	6/21-6/27	22	38	60	36.5	63.5	676	1,174	1,850	
27	6/28-7/04	28	72	100	28.8	71.2	942	2,330	3,272	
28	7/05-7/11	0	0	0	35.4	64.6	189	343	532	
29	7/12-7/18	0	0	0	45.2	54.8	262	318	580	
30	7/19-7/25	62	58	120	52.0	48.0	2,455	2,271	4,726	
31	7/26-8/01	18	12	30	60.0	40.0	674	450	1,124	
32	8/02-8/08	0	0	0	60.0	40.0	287	191	478	
Total		360	500	860	42.2	57.8	13,222	18,136	31,358	

Table 10.—Estimated age composition of Karluk Lake early-run sockeye salmon escapement by week, 2009.

Week	Sample Size															Total	
		1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	4.1	2.4	3.3	2.5	3.4	4.3		
22 5/24-5/30	0	Percent	21.2	0.0	3.8	17.3	1.9	0.0	23.1	19.2	0.0	0.0	11.5	1.9	0.0	0.0	100.0
		Numbers	3	0	1	2	0	0	3	3	0	0	2	0	0	0	13
23 5/31-6/06	52	Percent	19.3	0.1	3.5	18.2	2.1	0.0	24.0	20.0	0.1	0.3	10.4	1.6	0.3	0.0	100.0
		Numbers	133	1	24	126	15	0	166	138	1	2	72	11	2	0	691
24 6/07-6/13	162	Percent	12.6	0.8	2.0	21.7	3.9	0.0	25.9	22.7	0.7	1.5	6.3	0.3	1.6	0.0	100.0
		Numbers	2,108	135	341	3,630	645	0	4,335	3,788	114	244	1,057	48	265	7	16,717
25 6/14-6/20	200	Percent	10.0	3.0	0.9	24.6	10.4	0.0	19.6	22.0	1.9	0.9	4.6	0.0	1.7	0.3	100.0
		Numbers	966	293	83	2,368	1,003	0	1,889	2,123	179	90	446	0	161	29	9,630
26 6/21-6/27	198	Percent	6.4	3.6	0.6	26.2	10.0	0.0	22.5	21.9	1.8	0.8	5.1	0.0	0.8	0.2	100.0
		Numbers	1,088	620	101	4,497	1,712	5	3,858	3,758	307	144	882	0	132	30	17,133
27 6/28-7/04	165	Percent	2.1	2.1	2.1	22.8	14.0	0.5	17.9	27.5	0.2	1.1	8.1	0.0	1.6	0.0	100.0
		Numbers	124	120	122	1,321	810	29	1,036	1,595	11	66	468	0	92	0	5,794
28 7/05-7/11	117	Percent	2.4	2.5	1.2	26.7	12.5	0.1	17.8	27.0	0.1	0.3	7.7	0.0	1.7	0.0	100.0
		Numbers	55	57	27	616	289	3	410	623	2	7	179	0	39	0	2,306
29 7/12-7/18	114	Percent	1.4	5.5	1.3	21.2	12.7	0.0	19.0	28.6	1.8	1.2	7.0	0.0	0.1	0.0	100.0
		Numbers	6	23	5	88	53	0	79	119	8	5	29	0	1	0	414
30 7/19-7/21	20	Percent	0.2	9.3	0.2	24.3	18.8	0.0	11.5	21.5	0.3	0.2	13.6	0.0	0.0	0.0	100.0
		Numbers	0	9	0	24	19	0	12	21	0	0	14	0	0	0	100
Total		Percent	8.5	2.4	1.3	24.0	8.6	0.1	22.3	23.0	1.2	1.1	6.0	0.1	1.3	0.1	100.0
		Numbers	4,483	1,257	704	12,673	4,546	36	11,786	12,169	621	558	3,148	59	692	65	52,798

Table 11.—Length composition of Karluk Lake early-run sockeye salmon escapement samples by age and sex, 2009.

	Age														Total
	1.2	1.3	1.4	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	3.4	4.1	4.3	
Females															
Mean Length (mm)	458	513	528	0	500	528	526	0	412	489	523	541	0	563	503
SE	5	13	-	-	3	4	11	-	4	3	6	13	-	-	2
Range	401-524	449-580	528-528	0-0	420-570	411-600	484-552	0-0	404-418	418-572	442-584	500-572	0-0	563-563	401-600
Sample Size	35	10	1	0	125	105	5	0	3	119	32	5	0	1	441
Males															
Mean Length (mm)	459	523	0	364	502	557	565	619	368	498	548	557	366	0	481
SE	6	19	-	5	4	4	15	-	3	4	7	23	7	-	3
Range	399-533	469-550	0-0	316-436	398-590	412-639	533-621	619-619	310-468	396-593	470-614	439-625	326-406	0-0	310-639
Sample Size	32	4	0	29	119	108	5	1	97	130	33	7	12	0	577
All Fish															
Mean Length (mm)	459	516	528	364	501	543	545	619	369	494	536	550	366	563	490
SE	4	10	-	5	3	3	11	-	3	3	5	14	7	-	2
Range	399-533	449-580	528-528	316-436	398-590	411-639	484-621	619-619	310-468	396-593	442-614	439-625	326-406	563-563	310-639
Sample Size	67	14	1	29	244	213	10	1	100	249	65	12	12	1	1,018

Table 12.—Estimated sex composition of Karluk Lake sockeye salmon escapement by week, 2009.

Week	Dates	Sample Size			Escapement					
		Females	Males	Total	Percent	Females	Males	Females	Males	Total
22	5/24-5/30	0	0	0	41.3	58.7	5	8	13	
23	5/31-6/06	26	37	63	42.0	58.0	290	401	691	
24	6/07-6/13	86	104	190	43.3	56.7	7,238	9,479	16,717	
25	6/14-6/20	69	171	240	35.7	64.3	3,436	6,194	9,630	
26	6/21-6/27	112	128	240	40.3	59.7	6,908	10,225	17,133	
27	6/28-7/04	82	108	190	43.9	56.1	2,543	3,251	5,794	
28	7/05-7/11	73	74	147	48.5	51.5	1,118	1,188	2,306	
29	7/12-7/18	73	67	140	49.4	50.6	205	209	414	
30	7/19-7/21	6	8	14	42.2	57.8	42	58	100	
Early Total		527	697	1,224	41.3	58.7	21,785	31,013	52,798	
29	7/22-7/25	5	8	13	48.1	51.9	7	7	14	
	7/26-8/01	118	64	182	62.7	37.3	681	405	1,086	
	8/02-8/08	129	90	219	59.4	40.6	903	617	1,520	
	8/09-8/15	78	62	140	57.1	42.9	405	305	710	
	8/16-8/22	3	2	5	57.8	42.2	107	78	185	
	8/23-8/29	26	22	48	51.8	48.2	6,537	6,093	12,630	
	8/30-9/05	130	135	265	49.2	50.8	13,308	13,745	27,053	
	9/06-9/12	118	122	240	49.1	50.9	7,504	7,769	15,273	
	9/13-9/19	130	110	240	54.4	45.6	32,650	27,391	60,041	
	9/20-9/26	139	101	240	57.8	42.2	1,510	1,104	2,614	
Late Total		876	716	1,592	55.6	44.4	154,050	123,229	277,279	
Total		1,403	1,413	2,816	53.3	46.7	175,836	154,241	330,077	

Table 13.—Estimated age composition of Karluk Lake late-run sockeye salmon escapement by week, 2009.

Week	Sample Size	Age														Total		
		1.1	1.2	2.1	1.3	2.2	3.1	2.3	3.2	4.1	2.4	3.3	4.2	2.5	3.4	4.3		
30 7/22-7/25	20	Percent	0.0	0.0	7.7	0.0	20.6	18.6	10.7	28.1	0.5	0.2	13.6	0.0	0.0	0.0	0.0	100.0 14
		Numbers	0	0	1	0	3	3	1	4	0	0	2	0	0	0	0	
31 7/26-8/01	123	Percent	0.2	0.3	3.4	0.0	12.3	15.5	13.4	42.8	1.2	0.6	9.5	0.0	0.3	0.2	0.2	100.0 1,086
		Numbers	2	4	37	0	134	168	146	464	13	6	103	0	4	2	2	2
32 8/02-8/08	164	Percent	0.6	1.1	5.2	0.0	15.3	15.3	16.5	36.2	0.2	0.1	6.7	0.0	1.1	0.6	0.5	100.0 1,520
		Numbers	9	17	79	0	233	233	252	550	2	1	102	0	16	10	8	8
33 8/09-8/15	102	Percent	0.7	1.4	4.4	0.0	23.9	13.2	18.1	27.1	0.0	0.0	8.3	0.6	0.1	2.0	0.1	100.0 710
		Numbers	5	10	31	0	170	93	128	192	0	0	59	5	1	14	0	0
34 8/16-8/22	4	Percent	0.0	1.0	1.9	0.9	38.0	2.1	20.5	33.6	0.0	0.0	2.0	0.0	0.0	0.0	0.0	100.0 185
		Numbers	0	2	4	2	70	4	38	62	0	0	4	0	0	0	0	0
35 8/23-8/29	39	Percent	0.0	1.5	2.8	1.3	14.2	5.0	9.7	60.3	0.2	0.0	4.8	0.0	0.0	0.2	0.0	100.0 12,630
		Numbers	0	190	351	161	1,790	636	1,222	7,614	29	0	608	0	0	29	0	0
36 8/30-9/05	216	Percent	0.0	0.4	0.9	0.1	7.6	4.7	6.1	75.3	0.6	0.0	3.9	0.2	0.0	0.3	0.0	100.0 27,053
		Numbers	0	97	247	14	2,043	1,266	1,656	20,380	174	0	1,046	45	0	84	0	0
37 9/06-9/12	186	Percent	0.0	0.2	1.1	0.0	6.0	4.4	6.0	77.8	0.8	0.0	3.3	0.3	0.0	0.2	0.0	100.0 15,273
		Numbers	0	33	164	0	920	668	910	11,875	120	0	505	44	0	33	0	0
38 9/13-9/19	198	Percent	0.0	0.0	0.5	0.5	3.1	2.7	5.4	83.4	0.0	0.0	4.5	0.0	0.0	0.0	0.0	100.0 60,041
		Numbers	0	0	313	275	1,840	1,592	3,241	50,087	10	0	2,678	5	0	0	0	0
39 9/20-9/26	204	Percent	0.0	0.0	0.5	0.0	3.4	3.9	3.5	84.8	0.0	0.0	3.9	0.0	0.0	0.0	0.0	100.0 2,614
		Numbers	0	0	13	0	89	101	92	2,215	0	0	103	0	0	0	0	0
40 9/27-10/3	0	Percent	0.0	0.0	0.5	0.0	3.4	3.9	3.4	84.8	0.0	0.0	3.9	0.0	0.0	0.0	0.0	100.0 156,153
		Numbers	0	0	765	0	5,358	6,124	5,358	132,424	0	0	6,124	0	0	0	0	0
Total	1,256	Percent	0.0	0.1	0.7	0.2	4.6	3.9	4.7	81.5	0.1	0.0	4.1	0.0	0.0	0.1	0.0	100.0 277,280
		Numbers	15	353	2,006	453	12,650	10,889	13,044	225,869	348	8	11,334	99	21	170	10	10

Note: A post-weir estimate of 65,000 fish was included on 9/29.

Table 14.—Length composition of Karluk Lake late-run sockeye salmon escapement samples by age and sex, 2009.

	Age																
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	Total
Females																	
Mean Length (mm)	0	494	542	416	508	530	0	542	429	514	527	504	0	498	546	509	514
SE	-	33	-	16	3	5	-	-	3	1	6	19	-	2	-	-	1
Range	0-0	429-532	542-542	384-438	454-556	415-589	0-0	542-542	401-442	398-582	438-602	464-564	0-0	497-500	546-546	509-509	384-602
Sample Size	0	3	1	3	67	67	0	1	14	462	46	5	0	2	1	1	673
Males																	
Mean Length (mm)	343	471	560	371	521	565	587	590	389	534	558	0	402	0	0	0	506
SE	29	17	-	8	5	5	-	-	4	1	10	-	12	-	-	-	3
Range	314-372	449-504	560-560	299-448	452-574	451-627	587-587	590-590	326-483	438-595	422-615	0-0	373-440	0-0	0-0	0-0	299-627
Sample Size	2	3	1	23	37	42	1	1	85	351	22	0	5	0	0	0	573
All Fish																	
Mean Length (mm)	343	483	551	376	513	544	587	566	394	523	537	504	402	498	546	509	510
SE	29	17	9	8	3	4	-	24	4	1	5	19	12	2	-	-	2
Range	314-372	429-532	542-560	299-448	452-574	415-627	587-587	542-590	326-483	398-595	422-615	464-564	373-440	497-500	546-546	509-509	299-627
Sample Size	2	6	2	26	104	109	1	2	99	813	68	5	5	2	1	1	1,246

Table 15.—Estimated age composition of Ayakulik River (Red L.) early-run sockeye salmon escapement by week, 2009.

Week	Sample Size	Age												Total	
		1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4			
22 5/24-5/30	4	Percent	0.0	0.0	25.0	0.0	0.0	75.0	0.0	0.0	0.0	0.0	0.0	100.0	
		Numbers	0	0	1	0	0	3	0	0	0	0	0	4	
23 5/31-6/06	212	Percent	0.5	1.8	28.8	0.5	0.0	44.2	15.3	0.0	8.3	0.0	0.4	100.0	
		Numbers	13	43	692	13	1	1,060	366	1	200	1	10	2,400	
24 6/07-6/13	225	Percent	1.6	0.8	44.1	1.5	0.3	24.6	23.3	0.3	3.1	0.4	0.0	100.0	
		Numbers	849	407	22,698	771	151	12,648	12,012	151	1,585	229	7	51,507	
25 6/14-6/20	207	Percent	1.9	0.4	48.6	1.8	0.0	17.9	24.6	0.0	4.4	0.4	0.0	100.0	
		Numbers	622	118	15,676	579	1	5,779	7,933	1	1,420	117	0	32,246	
26 6/21-6/27	216	Percent	1.2	0.0	36.9	1.8	0.0	21.1	33.9	0.0	5.0	0.0	0.0	100.0	
		Numbers	561	14	16,938	826	0	9,696	15,532	0	2,282	14	0	45,863	
27 6/28-7/04	221	Percent	4.6	0.0	23.2	3.9	0.0	18.6	41.8	0.0	7.7	0.3	0.0	100.0	
		Numbers	1,468	0	7,369	1,228	0	5,913	13,303	0	2,443	87	0	31,811	
28 7/05-7/11	217	Percent	4.4	0.0	15.9	3.8	0.0	19.8	44.8	0.0	10.2	1.1	0.0	100.0	
		Numbers	953	0	3,475	823	0	4,343	9,807	0	2,236	251	0	21,889	
29 7/12-7/18	200	Percent	2.2	0.0	17.7	2.5	0.0	15.1	51.2	0.0	10.4	1.0	0.0	100.0	
		Numbers	450	0	3,549	495	0	3,029	10,281	0	2,087	195	0	20,086	
30 7/19-7/21	129	Percent	1.5	0.0	18.7	1.2	0.0	13.2	55.2	0.0	9.7	0.5	0.0	100.0	
		Numbers	170	0	2,099	130	0	1,482	6,214	0	1,095	62	0	11,252	
Total		Percent	2.3	0.3	33.4	2.2	0.1	20.2	34.8	0.1	6.1	0.4	0.0	100.0	
		Numbers	5,086	582	72,498	4,865	152	43,954	75,448	152	13,348	955	17	217,058	

Table 16.—Length composition of Ayakulik River (Red L.) early-run sockeye salmon escapement samples by age and sex, 2009.

	Age											Total
	0.3	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	
Females												
Mean Length (mm)	538	0	318	486	529	0	356	502	534	0	545	503
SE	11	-	7	2	2	-	8	2	5	-	-	2
Range	517-575	0-0	289-356	411-583	405-591	0-0	330-402	365-582	436-618	0-0	545-545	289-618
Sample Size	6	0	10	201	182	0	10	218	57	0	1	685
Males												
Mean Length (mm)	555	627	316	503	541	566	362	520	557	505	522	512
SE	-	-	5	2	2	-	6	2	5	-	21	2
Range	555-555	627-627	279-400	365-599	429-630	566-566	300-406	427-601	455-620	505-505	440-576	279-630
Sample Size	1	1	27	287	188	1	25	350	59	1	6	946
All Fish												
Mean Length (mm)	541	627	316	496	535	566	361	513	545	505	526	508
SE	10	-	4	1	2	-	4	1	3	-	18	1
Range	517-575	627-627	279-400	365-599	405-630	566-566	300-406	365-601	436-620	505-505	440-576	279-630
Sample Size	7	1	37	488	370	1	35	568	116	1	7	1,631

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Table 17.—Estimated sex composition of Ayakulik River (Red L.) sockeye salmon escapement by week, 2009.

Week	Dates	Sample Size			Escapement					
		Females	Males	Total	Percent	Females	Males	Females	Males	Total
22	5/24-5/30	3	2	5	60.0	40.0	2	2	4	
23	5/31-6/06	89	157	246	36.6	63.4	878	1,522	2,400	
24	6/07-6/13	96	155	251	40.7	59.3	20,939	30,568	51,507	
25	6/14-6/20	112	131	243	48.2	51.8	15,550	16,696	32,246	
26	6/21-6/27	132	108	240	53.5	46.5	24,534	21,329	45,863	
27	6/28-7/04	120	128	248	47.0	53.0	14,953	16,858	31,811	
28	7/05-7/11	94	150	244	38.0	62.0	8,321	13,568	21,889	
29	7/12-7/18	76	164	240	33.1	66.9	6,649	13,437	20,086	
30	7/19-7/21	51	94	145	36.4	63.6	4,095	7,157	11,252	
Early Total		773	1,089	1,862	44.2	55.8	95,921	121,137	217,058	
34	30	7/22-7/25	38	57	95	36.7	63.3	36	63	99
	31	7/26-8/01	89	162	251	38.3	61.7	7,333	11,800	19,133
	32	8/02-8/08	125	115	240	47.4	52.6	25,602	28,402	54,004
	33	8/09-8/15	118	129	247	47.1	52.9	6,860	7,702	14,562
	34	8/16-8/22	0	0	0	44.8	55.2	2,036	2,512	4,548
	35	8/23-8/29	43	60	103	46.3	53.7	1,318	1,528	2,846
	36	8/30-9/05	24	18	42	54.1	45.9	1,115	946	2,061
	37	9/06-9/12	3	5	8	40.6	59.4	243	356	599
	38	9/13-9/19	0	0	0	37.5	62.5	103	171	274
	Late Total		440	546	986	45.5	54.5	44,647	53,479	98,126
Total		1,213	1,635	2,848	44.6	55.4	140,569	174,615	315,184	

Table 18.—Estimated age composition of Ayakulik River (Red L.) late-run sockeye salmon escapement by week, 2009.

Week	Sample Size	Age										Total
		1.1	1.2	2.1	1.3	2.2	2.3	3.2	2.4	3.3		
30 7/22-7/25	43	Percent Numbers	2.0 2	17.6 17	1.4 1	13.6 13	54.8 54	10.3 10	0.4 0	0.0 0	0.0 0	100.0 99
31 7/26-8/01	226	Percent Numbers	3.7 712	14.8 2,839	3.3 633	14.2 2,711	50.8 9,711	12.8 2,449	0.2 46	0.2 31	0.0 0	100.0 19,133
32 8/02-8/08	216	Percent Numbers	4.3 2,332	17.0 9,154	5.4 2,925	10.0 5,404	47.5 25,649	14.1 7,641	1.0 540	0.7 359	0.0 0	100.0 54,004
33 8/09-8/15	218	Percent Numbers	1.9 281	12.2 1,779	11.5 1,677	7.4 1,083	41.4 6,028	22.9 3,340	2.2 314	0.4 60	0.0 0	100.0 14,562
34 8/16-8/22	0	Percent Numbers	2.1 93	11.3 514	12.0 545	9.1 414	37.3 1,695	24.9 1,131	3.2 145	0.2 10	0.0 0	100.0 4,548
35 8/23-8/29	88	Percent Numbers	1.6 46	8.0 229	11.3 321	8.0 228	34.8 990	33.1 943	3.2 91	0.0 0	0.0 0	100.0 2,846
36 8/30-9/05	36	Percent Numbers	0.1 3	2.9 60	7.7 159	0.7 14	38.8 799	45.2 933	2.4 50	0.0 0	2.1 44	100.0 2,061
37 9/06-9/12	5	Percent Numbers	0.0 0	0.4 3	1.3 8	0.0 0	23.5 141	41.2 247	16.8 101	0.0 0	16.8 101	100.0 599
38 9/13-9/19	0	Percent Numbers	0.0 0	0.0 0	0.0 0	0.0 0	20.0 55	40.0 110	20.0 55	0.0 0	20.0 55	100.0 274
Total	832	Percent Numbers	3.5 3,470	14.9 14,596	6.4 6,269	10.1 9,868	46.0 45,121	17.1 16,802	1.4 1,341	0.5 460	0.2 199	100.0 98,126

Table 19.—Length composition of Ayakulik River (Red L.) late-run sockeye salmon escapement samples by age and sex, 2009.

	Age									
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.2	3.3	Total
Females										
Mean Length (mm)	0	498	530	376	497	527	498	507	0	506
SE	-	4	5	30	2	3	-	7	-	2
Range	0-0	432-583	445-590	318-420	434-568	457-589	498-498	490-536	0-0	318-590
Sample Size	0	55	40	3	196	89	1	6	0	390
Males										
Mean Length (mm)	300	521	553	361	524	555	560	532	555	500
SE	5	4	5	5	2	4	33	11	-	4
Range	264-367	390-597	469-631	286-430	410-611	473-627	527-593	495-567	555-555	264-631
Sample Size	26	65	52	57	198	70	2	7	1	478
All Fish										
Mean Length (mm)	300	510	543	362	510	539	539	520	555	503
SE	5	3	3	5	2	3	28	8	-	2
Range	264-367	390-597	445-631	286-430	410-611	457-627	498-593	490-567	555-555	264-631
Sample Size	26	120	92	60	394	159	3	13	1	868

Table 20.—Estimated age composition of South Olga Lakes (Upper Station) early-run sockeye salmon escapement by week, 2009.

Week	Sample Size	Age										Total		
		1.1	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4				
21 5/17-5/23	0	Percent	0.0	1.7	0.9	48.5	32.3	0.9	14.4	0.9	0.4	100.0		
		Numbers	0	0	0	3	2	0	1	0	0	7		
22 5/24-5/30	229	Percent	0.0	1.8	0.9	48.4	32.4	0.9	14.4	0.9	0.4	100.0		
		Numbers	0	20	10	540	362	10	160	10	5	1,115		
23 5/31-6/06	226	Percent	0.2	3.2	2.4	42.5	40.6	0.2	10.7	0.1	0.0	100.0		
		Numbers	20	334	252	4,431	4,237	23	1,121	13	2	10,434		
24 6/07-6/13	222	Percent	0.6	4.6	6.2	35.6	42.5	0.6	9.5	0.3	0.0	100.0		
		Numbers	68	477	651	3,712	4,428	65	996	35	0	10,432		
25 6/14-6/20	218	Percent	0.6	3.2	8.4	35.5	42.5	0.1	9.2	0.4	0.0	100.0		
		Numbers	37	191	505	2,137	2,556	8	554	27	0	6,015		
26 6/21-6/27	215	Percent	2.8	4.2	24.4	20.0	37.8	0.0	10.8	0.0	0.0	100.0		
		Numbers	112	164	965	789	1,493	0	425	1	0	3,951		
27 6/28-7/04	109	Percent	1.4	4.5	24.3	14.9	44.6	0.0	10.3	0.0	0.0	100.0		
		Numbers	21	67	361	221	661	0	153	0	0	1,483		
28 7/05-7/11	227	Percent	1.2	3.2	24.9	17.6	42.8	0.0	10.4	0.0	0.0	100.0		
		Numbers	10	26	205	145	353	0	86	0	0	826		
29 7/12-7/15	0	Percent	0.6	3.1	27.5	21.0	38.4	0.0	9.4	0.0	0.0	100.0		
		Numbers	2	10	89	67	124	0	30	0	0	322		
Total		1,446	Percent	0.8	3.7	8.8	34.8	41.1	0.3	10.2	0.2	0.0	100.0	
			Numbers	269	1,289	3,037	12,047	14,217	106	3,526	86	6	34,585	

Table 21.—Length composition of South Olga Lakes (Upper Station) early-run sockeye salmon escapement samples by week, 2009.

	Age									Total
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	
Females										
Mean Length (mm)	0	495	548	545	421	514	545	606	522	529
SE	-	6	2	35	8	1	3	-	1	1
Range	0-0	415-547	465-624	510-580	402-436	409-596	466-605	606-606	521-524	402-624
Sample Size	0	31	278	2	4	356	82	1	3	757
Males										
Mean Length (mm)	357	500	568	592	365	529	556	0	556	497
SE	5	13	2	13	2	2	4	-	-	3
Range	320-391	390-563	464-634	580-605	312-462	425-609	475-658	0-0	556-556	312-658
Sample Size	15	17	187	2	175	216	75	0	1	688
All Fish										
Mean Length (mm)	357	497	556	568	367	520	550	606	531	514
SE	5	6	1	20	2	1	3	-	8	2
Range	320-391	390-563	464-634	510-605	312-462	409-609	466-658	606-606	521-556	312-658
Sample Size	15	48	465	4	179	572	157	1	4	1,445

Table 22.—Estimated sex composition of South Olga Lakes (Upper Station) sockeye salmon escapement by week, 2009.

Week	Dates	Sample Size			Escapement				Total
		Females	Males	Total	Percent	Females	Males	Number	
21	5/17-5/23	0	0	0	53.0	47.0	4	3	7
22	5/24-5/30	132	117	249	53.2	46.8	593	522	1,115
23	5/31-6/06	154	85	239	61.9	38.1	6,463	3,971	10,434
24	6/07-6/13	131	109	240	56.9	43.1	5,934	4,498	10,432
25	6/14-6/20	119	121	240	50.0	50.0	3,006	3,009	6,015
26	6/21-6/27	93	147	240	43.1	56.9	1,703	2,248	3,951
27	6/28-7/04	65	54	119	51.9	48.1	769	714	1,483
28	7/05-7/11	135	122	257	53.0	47.0	438	388	826
29	7/12-7/15	0	0	0	50.0	50.0	161	161	322
Early Total		829	755	1,584	55.1	44.9	19,071	15,514	34,585
39	7/16-7/18	27	29	56	48.4	51.6	31	34	65
	7/19-7/25	59	70	129	48.0	52.0	427	462	889
	7/26-8/01	24	16	40	56.5	43.5	9,170	7,064	16,234
	8/02-8/08	0	0	0	55.5	44.5	766	614	1,380
	8/09-8/15	117	123	240	49.8	50.2	21,599	21,781	43,380
	8/16-8/22	130	110	240	52.2	47.8	17,161	15,704	32,865
	8/23-8/29	130	110	240	54.8	45.2	18,695	15,423	34,118
	8/30-9/05	153	87	240	62.2	37.8	14,844	9,013	23,857
	9/06-9/12	141	99	240	59.6	40.4	4,920	3,331	8,251
	9/13-9/19	0	0	0	58.8	41.3	409	288	697
Late Total		781	644	1,425	54.4	45.6	88,023	73,713	161,736
Total		1,610	1,399	3,009	54.6	45.4	107,094	89,227	196,321

Table 23.—Estimated age composition of South Olga Lakes (Upper Station) late-run sockeye salmon escapement by week, 2009.

Week	Sample Size	Age												Total		
		0.1	0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2			
29 7/16-7/18	58	Percent	0.0	0.0	0.1	0.0	3.4	29.1	22.3	36.4	0.0	0.0	8.7	0.0	0.0	100.0
		Numbers	0	0	0	0	2	19	14	24	0	0	6	0	0	65
30 7/19-7/25	120	Percent	0.0	0.4	1.3	1.9	5.6	17.0	17.6	45.7	0.0	0.6	9.9	0.0	0.0	100.0
		Numbers	0	4	11	17	50	151	157	406	0	6	88	0	0	889
31 7/26-8/01	34	Percent	0.0	2.2	0.4	0.6	5.9	4.5	15.4	63.7	0.0	0.2	7.1	0.0	0.0	100.0
		Numbers	0	360	67	100	953	733	2,499	10,337	0	33	1,153	0	0	16,234
32 8/02-8/08	0	Percent	0.2	1.9	0.9	0.0	6.3	5.9	10.1	69.7	0.0	0.0	4.8	0.0	0.2	100.0
		Numbers	3	27	13	0	87	81	139	963	0	0	66	0	3	1,380
33 8/09-8/15	219	Percent	0.4	0.4	2.0	0.2	6.4	14.3	3.4	69.2	0.0	0.0	3.3	0.0	0.4	100.0
		Numbers	161	168	874	102	2,773	6,214	1,471	30,040	0	0	1,415	0	161	43,380
34 8/16-8/22	230	Percent	0.2	0.2	1.4	0.8	5.2	13.6	3.7	71.4	0.0	0.0	3.4	0.0	0.2	100.0
		Numbers	54	54	446	271	1,696	4,481	1,202	23,465	4	0	1,126	11	54	32,865
35 8/23-8/29	222	Percent	0.0	0.0	0.2	0.9	1.5	5.5	4.3	81.2	0.3	0.0	5.0	1.1	0.0	100.0
		Numbers	0	0	58	309	516	1,863	1,473	27,710	119	0	1,702	368	0	34,118
36 8/30-9/05	214	Percent	0.0	0.0	0.4	0.1	1.6	7.4	7.3	78.7	0.1	0.0	3.9	0.5	0.0	100.0
		Numbers	0	0	86	18	377	1,766	1,750	18,774	25	0	935	128	0	23,857
37 9/06-9/12	224	Percent	0.0	0.0	0.1	0.0	0.7	6.9	4.4	83.1	0.4	0.0	4.0	0.5	0.0	100.0
		Numbers	0	0	7	0	57	571	365	6,856	30	0	327	37	0	8,251
38 9/13-9/19	0	Percent	0.0	0.0	0.0	0.0	0.4	6.7	3.6	84.4	0.4	0.0	4.0	0.4	0.0	100.0
		Numbers	0	0	0	0	3	47	25	588	3	0	28	3	0	697
Total	1,321	Percent	0.1	0.4	1.0	0.5	4.0	9.8	5.6	73.7	0.1	0.0	4.2	0.3	0.1	100.0
		Numbers	218	613	1,561	817	6,514	15,925	9,096	119,162	181	39	6,846	548	218	161,736

Table 24.—Length composition of South Olga Lakes (Upper Station) late-run sockeye salmon escapement samples by week, 2009.

	Age													
	0.1	0.2	0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	Total
Females														
Mean Length (mm)	0	0	573	400	510	568	492	425	547	566	0	0	545	546
SE	-	-	10	-	6	5	-	9	1	6	-	-	15	1
Range	0-0	0-0	545-597	400-400	406-578	488-688	492-492	387-491	412-695	485-629	0-0	0-0	520-582	387-695
Sample Size	0	0	5	1	27	52	1	11	584	40	0	0	4	725
Males														
Mean Length (mm)	354	613	569	355	533	589	0	393	577	591	594	416	563	532
SE	-	38	9	12	12	8	-	3	2	9	-	12	-	4
Range	354-354	576-651	556-586	300-402	456-610	475-700	0-0	301-478	382-703	488-656	594-594	405-428	563-563	300-703
Sample Size	1	2	3	9	16	38	0	131	366	23	1	2	1	593
All Fish														
Mean Length (mm)	354	613	571	360	519	577	492	396	558	575	594	416	549	540
SE	-	38	6	11	6	4	-	3	1	5	-	12	12	2
Range	354-354	576-651	545-597	300-402	406-610	475-700	492-492	301-491	382-703	485-656	594-594	405-428	520-582	300-703
Sample Size	1	2	8	10	43	90	1	142	950	63	1	2	5	1,318

Table 25.—Estimated age composition of Frazer Lake sockeye salmon escapement by week, 2009.

Week	Sample Size	Age											Total	
		1.1	1.2	2.1	1.3	2.2	2.3	3.2	2.4	3.3	3.4	4.3		
24 6/07-6/13	0	Percent	0.0	28.6	14.3	14.3	14.3	28.6	0.0	0.0	0.0	0.0	100.0	
		Numbers	0	15	8	8	8	15	0	0	0	0	54	
25 6/14-6/20	7	Percent	0.0	28.6	14.3	14.3	14.3	28.6	0.0	0.0	0.0	0.0	100.0	
		Numbers	0	34	17	17	17	34	0	0	0	0	118	
26 6/21-6/27	247	Percent	0.1	16.0	1.4	29.1	16.8	22.5	2.9	0.1	10.5	0.1	0.6	100.0
		Numbers	11	2,254	204	4,095	2,373	3,164	412	11	1,474	11	82	14,091
27 6/28-7/04	277	Percent	0.3	10.7	1.8	27.0	26.3	22.5	4.1	0.3	6.5	0.4	0.0	100.0
		Numbers	63	2,053	349	5,170	5,053	4,320	793	63	1,247	70	2	19,182
28 7/05-7/11	213	Percent	0.0	8.6	5.4	20.9	32.3	20.3	6.3	0.0	5.8	0.4	0.0	100.0
		Numbers	4	1,249	784	3,048	4,702	2,950	917	4	843	64	0	14,564
29 7/12-7/18	435	Percent	0.0	8.0	2.8	13.7	39.7	18.8	10.4	0.0	6.4	0.2	0.0	100.0
		Numbers	0	1,789	629	3,090	8,938	4,230	2,336	0	1,434	46	0	22,491
30 7/19-7/25	219	Percent	0.0	6.7	8.4	9.8	39.7	17.0	13.4	0.0	4.9	0.0	0.1	100.0
		Numbers	0	762	951	1,117	4,505	1,928	1,523	0	556	1	13	11,356
31 7/26-8/01	213	Percent	0.0	4.7	8.4	13.9	42.2	16.9	7.7	0.0	5.6	0.0	0.5	100.0
		Numbers	0	459	814	1,346	4,079	1,635	746	1	545	0	44	9,669
32 8/02-8/08	203	Percent	0.0	4.9	6.3	10.9	41.9	17.7	11.1	0.4	6.7	0.0	0.1	100.0
		Numbers	0	416	535	925	3,541	1,496	940	36	563	0	6	8,458
33 8/09-8/15	139	Percent	0.0	6.3	8.3	12.7	38.5	21.8	7.7	0.7	4.0	0.0	0.0	100.0
		Numbers	0	59	78	119	361	204	72	7	37	0	0	936
34 8/16-8/22	0	Percent	0.0	6.5	8.6	12.9	38.1	22.3	7.2	0.7	3.6	0.0	0.0	100.0
		Numbers	0	60	80	120	353	207	67	7	33	0	0	926
Total	1,953	Percent	0.1	9.0	4.4	18.7	33.3	19.8	7.7	0.1	6.6	0.2	0.1	100.0
		Numbers	78	9,150	4,448	19,055	33,929	20,183	7,805	128	6,732	192	146	101,845

Table 26.—Length composition of Frazer Lake sockeye salmon escapement samples by age and sex, 2009.

	Age												Total
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.2	3.3	3.4	4.3		
Females													
Mean Length (mm)	0	512	561	0	518	558	538	518	552	550	562	538	
SE	-	3	2	-	1	2	10	3	3	7	-	1	
Range	0-0	443-596	462-630	0-0	446-598	462-636	528-548	446-613	474-622	543-557	562-562	443-636	
Sample Size	0	82	234	0	395	280	2	105	97	2	1	1198	
Males													
Mean Length (mm)	345	513	575	356	540	575	573	536	573	591	566	527	
SE	-	4	3	2	2	3	-	4	5	-	2	3	
Range	345-345	407-602	492-647	319-427	424-615	486-638	573-573	457-606	527-648	591-591	564-568	319-648	
Sample Size	1	89	114	88	267	105	1	52	34	1	2	754	
All Fish													
Mean Length (mm)	345	512	566	356	527	563	549	524	558	563	564	534	
SE	-	3	2	2	1	2	13	2	3	14	2	1	
Range	345-345	407-602	462-647	319-427	424-615	462-638	528-573	446-613	474-648	543-591	562-568	319-648	
Sample Size	1	171	348	88	662	385	3	157	131	3	3	1,952	

Table 27.—Estimated sex composition of Frazer Lake sockeye salmon escapement by week, 2009.

Week	Dates	Sample Size			Escapement					
		Females	Males	Total	Percent	Females	Males	Females	Males	Total
24	6/07-6/13	0	0	0	25.0	75.0	14	41	54	
25	6/14-6/20	2	6	8	25.0	75.0	30	89	118	
26	6/21-6/27	143	137	280	51.9	48.1	7,315	6,776	14,091	
27	6/28-7/04	197	123	320	60.8	39.2	11,661	7,521	19,182	
28	7/05-7/11	129	111	240	54.6	45.4	7,949	6,615	14,564	
29	7/12-7/18	273	207	480	57.9	42.1	13,012	9,479	22,491	
30	7/19-7/25	155	85	240	65.3	34.7	7,414	3,942	11,356	
31	7/26-8/01	165	75	240	68.8	31.2	6,650	3,019	9,669	
32	8/02-8/08	180	60	240	74.1	25.9	6,269	2,189	8,458	
33	8/09-8/15	123	37	160	76.7	23.3	718	218	936	
34	8/16-8/22	0	0	0	76.9	23.1	712	214	926	
Total		1,367	841	2,208	60.6	39.4	61,742	40,103	101,845	

Table 28.—Estimated age composition of Saltery Lake sockeye salmon escapement by week, 2009.

Week	Sample Size	Age									Total	
		0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3			
26 6/21-6/27	0	Percent	0.0	2.7	1.8	0.0	65.2	9.8	0.9	19.6	100.0	
		Numbers	0	60	40	0	1,448	218	20	436	2,222	
27 6/28-7/04	112	Percent	0.0	2.8	2.3	0.0	66.0	9.6	0.8	18.5	100.0	
		Numbers	0	61	49	0	1,428	208	16	400	2,162	
28 7/05-7/11	141	Percent	0.0	3.5	4.4	0.0	69.3	9.4	0.1	13.2	100.0	
		Numbers	0	240	301	0	4,735	645	8	904	6,833	
29 7/12-7/18	104	Percent	0.2	4.3	3.5	0.0	54.8	20.7	0.2	16.2	100.0	
		Numbers	10	181	147	0	2,312	873	10	681	4,216	
30 7/19-7/25	77	Percent	1.0	2.5	8.0	0.3	47.4	22.3	1.0	17.5	100.0	
		Numbers	126	308	986	31	5,846	2,746	126	2,156	12,324	
31 7/26-8/01	68	Percent	0.4	1.8	5.7	1.1	40.3	30.8	0.4	19.5	100.0	
		Numbers	39	191	613	113	4,310	3,293	39	2,088	10,687	
32 8/02-8/08	61	Percent	0.0	0.5	6.8	0.5	40.3	30.4	0.0	21.5	100.0	
		Numbers	0	28	422	28	2,493	1,883	0	1,329	6,184	
33 8/09-8/15	19	Percent	0.0	0.0	15.2	0.0	47.0	21.6	0.0	16.2	100.0	
		Numbers	0	0	299	0	922	423	0	318	1,963	
Total		Percent	0.4	2.3	6.1	0.4	50.4	22.1	0.5	17.8	100.0	
		Numbers	176	1,069	2,857	172	23,495	10,289	220	8,313	46,591	

Note: A post-weir estimate of 800 fish was included on 8/12.

Table 29.—Length composition of Saltery Lake sockeye salmon escapement samples by age and sex, 2009.

	Age								
	0.2	0.3	1.2	1.3	1.4	2.1	2.2	2.3	Total
Females									
Mean Length (mm)	0	551	501	553	0	0	495	556	542
SE	-	12	4	2	-	-	4	5	2
Range	0-0	514-581	487-513	450-612	0-0	0-0	445-588	480-600	445-612
Sample Size	0	6	6	166	0	0	49	41	268
Males									
Mean Length (mm)	538	588	500	581	629	351	525	581	565
SE	-	9	9	2	1	-	3	4	2
Range	538-538	538-620	435-608	500-650	628-630	351-351	475-580	458-632	351-650
Sample Size	1	10	22	161	2	1	58	59	314
All Fish									
Mean Length (mm)	538	574	500	567	629	351	511	571	554
SE	-	9	7	2	1	-	3	3	2
Range	538-538	514-620	435-608	450-650	628-630	351-351	445-588	458-632	351-650
Sample Size	1	16	28	327	2	1	107	100	582

Table 30.—Estimated sex composition of Saltery Lake sockeye salmon escapement by week, 2009.

Week	Dates	Sample Size			Escapement			Number		
		Females	Males	Total	Percent	Females	Males	Females	Males	Total
26	6/21-6/27				48.9	51.1		1,087	1,135	2,222
27	6/28-7/04	67	70	137	48.1	51.9		1,040	1,122	2,162
28	7/05-7/11	72	94	166	44.4	55.6		3,031	3,802	6,833
29	7/12-7/18	63	66	129	50.0	50.0		2,109	2,107	4,216
30	7/19-7/25	49	37	86	54.0	46.0		6,651	5,673	12,324
31	7/26-8/01	33	47	80	45.7	54.3		4,885	5,802	10,687
32	8/02-8/08	25	51	76	36.0	64.0		2,224	3,960	6,184
33	8/09-8/15	9	15	24	37.2	62.8		731	1,232	1,963
Total		318	380	698	46.7	53.3		21,758	24,833	46,591

Note: A post-weir estimate of 800 fish was included on 8/12.

Table 31.—Age composition of Kitoi Bay hatchery chum salmon broodstock samples by week, 2009

Week	Sample Size	Age			Total	
		0.2	0.3	0.4		
29 7/12-7/18	148	Percent	12.2	69.6	18.2	100.0
		Numbers	18	103	27	148
30 7/19-7/25	226	Percent	24.3	61.5	14.2	100.0
		Numbers	55	139	32	226
31 7/26-8/01	264	Percent	29.5	59.8	10.6	100.0
		Numbers	78	158	28	264
32 8/02-8/08	253	Percent	31.6	63.6	4.7	100.0
		Numbers	80	161	12	253
Total	891	Percent	25.9	63.0	11.1	100.0
		Numbers	231	561	99	891

Table 32.—Length composition of Kitoi Bay hatchery chum salmon broodstock samples by age and sex, 2009.

	Age			Total
	0.2	0.3	0.4	
Females				
Mean Length (mm)	534	566	580	563
SE	4	2	3	2
Range	460-600	480-650	540-650	460-650
Sample Size	58	315	48	421
Males				
Mean Length (mm)	518	565	586	548
SE	2	2	5	2
Range	440-610	480-660	530-650	440-660
Sample Size	171	223	40	434
All Fish				
Mean Length (mm)	522	565	583	556
SE	2	1	3	1
Range	440-610	480-660	530-650	440-660
Sample Size	229	538	88	855

Table 33.—Kodiak sockeye salmon escapement age-2.2 average length (metf mm) by year, system 1985 to 2009.

Year	Karluk Early	Karluk Late	Ayakulik Early	Ayakulik Late	Upper Stn Early	Upper Stn Late	Frazer	Afognak	Saltery
1985	518	538	517	539	530	529	502	467	501
1986	519	555	519	*	509	567	505	474	542
1987	517	531	518	530	529	567	505	485	499
1988	504	532	514	545	520	563	508	477	479
1989	510	530	538	543	515	551	506	483	528
1990	506	537	519	530	486	527	504	478	494
1991	507	522	520	545	498	535	506	460	*
1992	482	516	514	535	488	518	499	457	*
1993	505	521	540	560	505	541	497	480	517
1994	481	512	505	523	480	522	482	464	481
1995	503	537	530	542	509	543	513	485	514
1996	517	548	530	543	517	563	526	473	530
1997	504	504	507	498	510	530	512	466	*
1998	486	512	485	529	477	523	490	453	*
1999	509	528	533	537	517	539	515	492	*
2000	502	523	503	535	509	564	505	479	*
2001	518	535	510	524	505	558	521	473	521
2002	501	535	530	536	523	551	515	480	516
2003	511	534	519	539	501	544	501	487	507
2004	491	529	512	532	499	544	508	465	*
2005	487	508	493	509	488	529	486	473	*
2006	475	488	489	513	497	526	516	472	*
2007	491	500	518	518	505	546	494	498	*
2008	479	507	507	519	502	554	490	480	502
2009	500	514	513	509	520	559	527	495	511
1985-2008 Avg.	501	524	515	531	505	543	504	475	509
1985-1996 Avg.	506	532	522	540	507	544	504	474	509
1997-2008 Avg.	496	517	509	524	503	542	504	477	512

Note: * represent years where no data was collected.

Table 34.—Kodiak sockeye salmon escapement age-2.3 average length (metf mm) by year, system 1985 to 2009.

Year	Karluk Early	Karluk Late	Ayakulik Early	Ayakulik Late	Upper Stn Early	Upper Stn Late	Frazer	Afognak	Saltery
1985	555	580	551	580	556	585	538	526	555
1986	552	598	555	*	563	588	555	536	568
1987	562	576	562	581	567	584	572	551	575
1988	569	582	557	589	567	610	553	525	555
1989	562	578	564	575	561	572	565	502	564
1990	553	571	562	572	542	578	558	534	536
1991	549	555	556	580	545	541	574	523	*
1992	535	551	560	570	533	562	534	522	*
1993	539	556	570	612	539	573	543	531	576
1994	524	549	544	578	518	560	541	521	554
1995	541	551	561	574	546	551	549	533	557
1996	568	581	561	584	556	591	571	551	589
1997	563	556	548	539	551	539	569	533	*
1998	531	552	523	550	518	549	546	511	*
1999	538	542	551	578	537	555	548	533	*
2000	551	563	551	580	546	592	557	549	*
2001	560	574	552	564	557	591	568	563	581
2002	558	587	554	576	554	580	569	526	586
2003	547	567	569	583	534	565	561	536	556
2004	537	576	550	568	541	583	562	543	*
2005	532	541	527	524	539	565	545	532	*
2006	527	541	523	549	535	545	544	524	*
2007	541	549	540	548	546	549	554	558	*
2008	536	552	529	547	518	583	536	552	561
2009	543	543	545	539	550	576	563	545	571
1985-2008 Avg.	547	564	551	570	545	570	555	534	565
1985-1996 Avg.	551	569	559	581	549	575	554	530	563
1997-2008 Avg.	543	558	543	559	540	566	555	538	571

Note: * represent years where no data was collected.

Table 35.—Kodiak Management Area commercial salmon harvest by species and year, 1970 through 2009.

Year	Species ^a					Total
	Chinook	Sockeye	Coho	Pink	Chum	
1970	1,089	917,047	66,424	12,036,598	919,972	13,941,130
1971	920	478,479	22,844	4,334,492	1,541,444	6,378,183
1972	1,300	222,408	16,587	2,478,064	1,163,426	3,881,785
1973	800	167,341	3,573	511,708	317,921	1,001,343
1974	545	418,761	13,631	2,647,244	249,294	3,329,475
1975	101	136,418	23,659	2,942,801	84,431	3,187,410
1976	766	641,484	23,714	11,077,992	740,495	12,484,451
1977	585	623,468	27,920	6,252,405	1,072,313	7,976,691
1978	3,228	1,071,782	48,795	15,004,065	814,345	16,942,215
1979	1,907	630,756	140,629	11,285,809	358,336	12,417,437
1980	529	651,394	139,154	17,290,615	1,075,557	19,157,249
1981	1,418	1,288,980	121,544	10,336,829	1,345,328	13,094,099
1982	1,214	1,203,787	344,823	8,089,780	1,262,587	10,902,191
1983	3,839	1,231,989	157,612	4,603,371	1,085,165	7,081,976
1984	4,657	1,950,639	229,524	10,844,293	649,092	13,678,205
1985	4,970	1,842,731	284,166	7,334,825	430,757	9,897,449
1986	4,381	3,188,046	168,690	11,807,727	1,134,372	16,303,216
1987	4,613	1,794,773	192,540	5,075,101	682,023	7,749,050
1988	22,374	2,699,014	303,298	14,559,038	1,426,410	19,010,134
1989 ^b	106	1,289,511	2,599	183,235	19,972	1,495,423
1990	18,808	5,248,400	293,819	5,983,812	577,750	12,122,589
1991	22,234	5,704,100	324,860	16,642,841	1,029,071	23,723,106
1992	24,299	4,167,871	280,085	3,310,644	679,559	8,462,458
1993	41,029	4,378,886	313,467	34,019,420	588,331	39,341,133
1994	22,576	2,877,999	296,311	8,162,564	738,856	12,098,306
1995	18,704	4,488,502	307,795	42,849,309	1,522,810	49,187,120
1996	13,071	4,970,362	201,836	3,486,930	543,751	9,215,950
1997	18,735	2,506,427	381,099	11,035,134	520,331	14,461,726
1998	17,349	3,623,712	425,152	22,062,465	316,115	26,444,793
1999	18,299	4,653,057	296,979	11,898,382	913,867	17,780,584
2000	12,293	2,906,441	333,052	9,927,397	1,194,448	14,373,631
2001	23,843	2,659,637	409,193	19,567,163	1,053,763	23,713,599
2002	19,320	1,831,014	503,615	18,328,638	650,178	21,332,765
2003	18,603	4,053,847	351,767	14,067,235	1,151,885	19,643,337
2004	28,907	4,169,565	490,161	21,440,905	1,121,873	27,251,411
2005	14,465	3,052,048	396,841	30,143,647	477,435	34,084,436
2006	20,383	1,585,630	556,310	31,694,492	1,082,132	34,938,947
2007	17,248	2,014,141	356,583	24,811,459	728,920	27,928,351
2008	17,252	1,821,629	301,460	8,788,476	908,030	11,836,847
2009	7,268	1,727,776	291,470	27,649,826	955,814	30,632,154
Average						
2004-2008	19,651	2,528,603	420,271	23,375,796	863,678	27,207,998
1999-2008	19,061	2,874,701	399,596	19,066,779	928,253	23,288,391

^a Catch numbers include personal use with commercial gear and ADF&G test fisheries.

^b Actual harvest numbers for 1989 are shown above. For the projected harvest if the *Exxon Valdez* oil spill had not eliminated a major portion of the commercial fishery consult Barrett et al. 1990.

Table 36.—Commercial salmon catch numbers by species, district, and section, Kodiak Management Area, 2009.

District	Section	Species									
		Chinook		Sockeye		Coho		Pink		Chum	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Afognak District											
S.W.AFOGNAK & RASPBERRY STRAITS SECTIONS											
(251-10,11,12,20)	Personal use of commercial catch	407 3	3,696 50	66,897	376,062	5,201	38,636	623,392	1,991,005	29,945	244,449
N.W. AFOGNAK SECTION											
(251-30,40,41,50)	Personal use of commercial catch	6	48	28,187 150	148,568 923	393	2,883	63,779	201,348	2,061	18,670
SHUYAK ISLAND SECTION											
(251-60,70,81)		0	0	0	0	0	0	0	0	0	0
PERENOSA & PAULS BAYS SECTIONS COMBINED											
(251-82,83,84,85)		50	161	18,057	97,406	3,714	26,604	828,662	2,602,644	2,492	17,614
N.E.AFOGNAK SECTION											
(251-90, 252-10,20)		271 1	1,638 10	17,015 0	96,367 0	6,672 0	48,894 0	1,149,309 511	3,875,747 1,890	13,641 0	99,774 0
DUCK, IZHUT, & KITOI BAYS SECTIONS COMBINED											
(252-30,31,32)	Personal use of commercial catch	691 9	5,058 120	82,294 6	439,101 30	151,881 2,681	1,003,982 17,568	8,939,194 371	28,999,167 1,299	93,299 0	632,469 0
S.E.AFOGNAK											
(252-33,34,35)	Personal use of commercial catch	41 0	239 0	2,522 21	13,634 115	2,756 25	21,406 250	155,012 0	506,102 0	2,247 0	16,268 0
Subtotal		1,479	11,020	215,149	1,172,206	173,323	1,160,223	11,760,230	38,179,202	143,685	1,029,244
Northwest Kodiak District											
UGANIK, TERROR, VIEKODA, & KUPREANOF AREAS COMBINED											
(253-11,12,13,14,31-35)	Personal use of commercial catch	735 0	8,050 0	237,392 412	1,363,621 2,355	33,909 18	220,362 136	2,096,595 0	7,230,857 0	159,759 0	1,247,669 0
UYAK, SPIRIDON, & ZACHAR, AREAS COMBINED											
(254-10,20,21,30,31,40,41)		306	3,823	165,108	913,262	8,722	64,085	1,364,375	5,095,228	95,536	721,200
TELROD COVE (SHA)											
(254-50)		0	0	81,725	488,046	0	0	48,921	181,400	6,081	47,742
NORTH CAPE, ANTON LARSEN, SHERATIN, & KIZHUYAK AREAS COMBINED											
(259-30,31,33,34,35,36,37,38,39)		160	1,655	29,707	175,476	8,887	60,913	753,300	2,470,251	67,437	503,186
Subtotal		1,201	13,528	514,344	2,942,760	51,536	345,496	4,263,191	14,977,736	328,813	2,519,797

-continued-

Table 36.—Page 2 of 3.

District	Section	Species									
		Chinook		Sockeye		Coho		Pink		Chum	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Southwest Kodiak District											
INNER and OUTER KARLUK SECTION											
(255-10, 20)		0	0	0	0	0	0	0	0	0	0
STURGEON SECTION											
(256-40)		0	0	0	0	0	0	0	0	0	0
HALIBUT BAY SECTION											
(256-25,30)		8	135	12,297	65,559	274	2,040	54,982	163,877	610	4,917
INNER & OUTER AYAKULIK SECTIONS											
(256-10,15,20)		5	71	66,493	374,784	371	2,806	44,313	152,096	628	4,952
Subtotal		13	206	78,790	440,343	645	4,846	99,295	315,973	1,238	9,869
Alitak Bay District											
CAPE ALITAK AND HUMPY-DEADMAN SECTIONS											
(257-10,20,50,60,70)		196	3,411	228,912	1,338,016	4,736	31,966	3,882,957	12,730,670	64,900	507,332
Personal use of commercial catch		0	0	15	90	0	0	0	0	0	0
ALITAK BAY, MOSER BAY, OLGA BAY, AND OUTER UPPER STATION SECTIONS											
(257-30,40,41,42,43)		8	142	402,400	2,213,765	3,147	27,362	113,207	442,627	7,597	59,053
Personal use of commercial catch		0	0	86	484	2	15	1	4	0	0
Subtotal		204	3,553	631,413	3,552,355	7,885	59,343	3,996,165	13,173,301	72,497	566,385
Eastside Kodiak District											
SEVEN RIVERS SECTION											
(258-70,80,83,85,90)		72	871	11,342	66,255	1,303	8,359	865,858	2,754,480	10,355	73,578
TWO-HEADED SECTION											
(258-54,55,60)		78	1,041	8,501	51,565	3,050	19,775	463,933	1,562,762	14,275	113,942
SITKALIDAK SECTION											
(258-10,20,30,40,51,52,53)		1,858	13,593	68,926	374,916	30,937	210,338	3,471,347	11,561,344	194,943	1,546,807
Personal use of commercial catch		15	272	101	530	0	0	0	0	6	40
INNER & OUTER UGAK											
(259-40,41,42,43,44,45,46)		266	2,488	26,736	154,124	9,361	33,681	807,319	2,701,410	44,742	363,171
Personal use of commercial catch		12	116	14	70	0	0	0	0	0	0
Subtotal		2,301	18,381	115,620	647,460	44,651	272,153	5,608,457	18,579,996	264,321	2,097,538

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Table 36.–Page 3 of 3.

District	Section	Species									
		Chinook		Sockeye		Coho		Pink		Chum	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Northeast Kodiak District											
MONASHKA MILLBAY SECTION (259-10)		162	1,939	623	3,487	1,046	7,723	215,007	795,985	1,265	11,139
INNER AND OUTER CHINIAK BAY SECTIONS (259-21,22,23,24,25,26,27)		66	635	426	2,206	2,817	12,504	1,075,681	3,611,471	22,188	190,695
Subtotal		228	2,574	1,049	5,693	3,863	20,227	1,290,688	4,407,456	23,453	201,834
Mainland District											
BIG RIVER SECTION (262-10,15)		0	0	0	0	0	0	0	0	0	0
HALLO BAY SECTION (262-20)		0	0	0	0	0	0	0	0	0	0
INNER AND OUTER KUKAK BAY SECTIONS (262-25,27,30)		1	2	19	95	15	129	2,819	10,122	2,258	20,386
DAKAVAK BAY SECTION (262-35,40,45,50,55)		183	2,306	6,217	36,065	1,001	7,040	60,429	194,257	12,682	98,715
KATMAI SECTION (262-60)		12	86	1,349	8,636	120	906	1,003	3,112	202	1,761
ALINCHAK BAY SECTION (262-65,70)		275	2,452	21,454	130,829	890	5,823	238,368	768,064	48,630	410,330
CAPE IGVAK (262-75,80,90,95)		1,362	12,667	142,372	910,121	7,541	52,075	329,181	966,996	58,035	425,197
Personal use of commercial catch		9	72	0	0	0	0	0	0	0	0
Subtotal		1,842	17,585	171,411	1,085,746	9,567	65,973	631,800	1,942,551	121,807	956,389
TOTAL excluding personal use		7,219	66,207	1,726,971	9,841,966	288,744	1,910,292	27,648,943	91,573,022	955,808	7,381,016
Personal use of commercial catch		49	640	805	4,597	2,726	17,969	883	3,193	6	40
GRAND TOTAL		7,268	66,847	1,727,776	9,846,563	291,470	1,928,261	27,649,826	91,576,215	955,814	7,381,056

Note: Catch numbers include personal use with commercial gear and ADF&G test fisheries.

Table 37.—Estimated age composition of commercial sockeye salmon catches by sample area, Kodiak Management Area, 2009.

District	Catch Area	Sample Size		0.3	1.2	2.1	1.3	2.2	2.3	3.2	3.3	Other ^a	Total
NW Kodiak District													
	Uganik-Viekoda-Kupreanof	2,842	Percent	1.1	11.2	0.0	31.7	25.6	20.2	8.5	0.9	0.7	100.0
			Numbers	2,690	26,684	0	75,361	60,871	47,998	20,313	2,220	1,666	237,804
	Uyak Bay	2,801	Percent	1.5	7.7	0.4	21.8	30.2	19.5	16.3	1.9	0.8	100.0
			Numbers	2,479	12,680	682	35,978	49,898	32,159	26,928	3,060	1,244	165,108
	Spiridon SHA (Telrod Cove)	1,206	Percent	0.4	20.0	1.2	48.6	20.8	8.3	0.1	0.0	0.6	100.0
			Numbers	339	16,364	958	39,746	17,014	6,769	64	1	471	81,726
Afognak District													
	Foul Bay SHA	328	Percent	0.0	35.7	0.3	42.4	4.3	7.3	0.0	0.0	10.1	100.0
			Numbers	0	2,321	20	2,758	278	476	0	0	655	6,508
96	Waterfall Bay SHA	542	Percent	0.0	79.4	0.0	10.3	2.7	1.8	0.0	0.0	5.7	100.0
			Numbers	0	1,869	0	243	64	43	0	0	133	2,353
SW Kodiak District													
	Ayakulik-Halibut Bay	706	Percent	0.2	17.6	3.0	8.1	61.5	8.4	1.0	0.2	0.1	100.0
			Numbers	125	13,881	2,350	6,387	48,448	6,605	770	125	99	78,790
Alitak Bay District													
	Moser-Olga-Alitak (gillnet)	3,528	Percent	1.1	7.5	0.0	17.4	54.3	12.4	3.4	3.4	0.4	100.0
			Numbers	4,499	30,285	107	69,835	218,598	49,880	13,666	13,845	1,771	402,486
	Total	11,953	Percent	1.0	10.7	0.4	23.6	40.5	14.8	6.3	2.0	0.6	100.0
			Number	10,132	104,085	4,117	230,308	395,171	143,931	61,741	19,252	6,039	974,775

^a The “Other” age class listed in the table above consists of age-0.1, -0.2, -1.1, -0.4, -3.1, -1.4, -2.4, -3.4, -4.2 and -4.3.

Table 38.—Estimated age composition of Uganik-Viekoda-Kupreanof bays (253-11, 12, 13, 14, 31, 32, 33, 35) commercial sockeye salmon catch by week, 2009.

Week	Sample Size	Age													Total	
		0.2	1.1	0.3	1.2	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3		
24 6/07-6/13	368 Percent	0.5	0.5	1.8	13.4	0.0	50.6	12.7	0.7	0.5	11.7	5.1	0.0	2.0	0.2	100.0
	Numbers	96	96	368	2,674	0	10,090	2,529	145	109	2,340	1,022	6	404	48	19,928
25 6/14-6/20	352 Percent	0.0	0.0	1.5	8.2	0.0	49.3	22.1	0.1	0.6	12.2	4.9	0.3	1.0	0.0	100.0
	Numbers	7	7	223	1,249	0	7,523	3,373	10	86	1,859	741	40	146	3	15,267
28 7/05-7/11	354 Percent	0.0	0.3	0.9	10.8	0.0	46.5	16.6	0.0	0.3	24.2	0.2	0.0	0.3	0.0	100.0
	Numbers	0	151	516	6,479	0	27,822	9,899	0	174	14,454	141	6	168	0	59,809
29 7/12-7/18	372 Percent	0.0	0.0	0.9	13.8	0.1	29.8	28.4	0.0	0.3	24.9	1.5	0.0	0.2	0.0	100.0
	Numbers	0	0	338	4,963	23	10,694	10,169	0	120	8,913	552	0	70	0	35,842
30 7/19-7/25	363 Percent	0.0	0.0	1.2	14.7	0.2	26.7	26.6	0.0	0.6	25.6	3.5	0.0	0.9	0.0	100.0
	Numbers	0	0	224	2,809	41	5,112	5,098	0	111	4,904	661	9	166	0	19,134
31 7/26-8/01	350 Percent	0.0	0.0	1.1	12.2	0.0	19.2	35.6	0.0	0.5	20.5	9.4	0.1	1.4	0.0	100.0
	Numbers	0	0	523	5,911	3	9,291	17,234	0	223	9,953	4,562	73	682	0	48,455
32 8/02-8/08	354 Percent	0.0	0.0	1.5	7.9	0.0	14.4	32.9	0.0	0.0	14.9	26.8	0.1	1.5	0.0	100.0
	Numbers	0	0	370	2,001	0	3,630	8,332	0	0	3,777	6,772	37	370	0	25,290
33 8/09-8/15	329 Percent	0.0	0.0	0.9	4.3	0.0	8.5	30.1	0.0	0.0	12.8	41.6	0.3	1.5	0.0	100.0
	Numbers	0	0	126	587	0	1,173	4,148	0	0	1,760	5,740	42	209	0	13,785
36 8/30-9/05	0 Percent	0.0	0.0	0.9	4.3	0.0	8.5	30.1	0.0	0.0	12.8	41.6	0.3	1.5	0.0	100.0
	Numbers	0	0	3	13	0	25	88	0	0	38	122	1	4	0	294
Total	2,842 Numbers	0.0 103	0.1 254	1.1 2,690	11.2 26,684	0.0 67	31.7 75,361	25.6 60,871	0.1 154	0.3 824	20.2 47,998	8.5 20,313	0.1 213	0.9 2,220	0.0 51	100.0 237,804

Table 39.—Estimated age composition of Uyak Bay (254-10, 20, 30, 40) commercial sockeye salmon catch by week, 2009.

Week	Sample Size	Age														Total		
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	4.1	2.4	3.3	3.4		
24 6/07-6/13	347	Percent	0.0	0.0	1.5	18.3	0.0	34.3	18.5	0.0	0.0	16.5	6.1	0.0	0.8	4.0	0.0	100.0
		Numbers	0	0	164	1,969	0	3,691	1,988	0	0	1,777	652	2	85	426	2	10,757
25 6/14-6/20	357	Percent	0.0	0.0	2.4	13.8	0.0	37.6	21.9	0.0	0.0	14.5	6.2	0.3	0.1	3.1	0.3	100.0
		Numbers	0	0	209	1,177	0	3,201	1,863	0	0	1,232	525	22	5	268	22	8,524
28 7/05-7/11	360	Percent	0.0	0.1	1.9	6.4	0.1	32.5	26.4	0.0	0.3	30.5	0.8	0.0	0.2	0.8	0.0	100.0
		Numbers	0	16	565	1,893	32	9,674	7,852	0	99	9,091	249	0	67	233	0	29,769
29 7/12-7/18	355	Percent	0.1	0.2	1.4	9.8	0.5	33.6	25.3	0.0	0.5	25.7	1.6	0.0	0.1	1.2	0.1	100.0
		Numbers	9	30	200	1,387	70	4,737	3,577	0	70	3,629	222	0	9	164	9	14,115
30 7/19-7/25	359	Percent	0.2	0.0	0.8	7.0	0.3	24.7	31.4	0.0	0.3	26.6	5.5	0.0	0.3	2.6	0.2	100.0
		Numbers	45	2	164	1,491	74	5,239	6,660	0	74	5,646	1,172	0	58	562	45	21,232
31 7/26-8/01	350	Percent	0.1	0.0	1.4	8.9	0.5	19.1	37.9	0.0	0.5	17.1	12.4	0.0	0.3	1.7	0.0	100.0
		Numbers	19	0	468	2,924	158	6,255	12,396	0	168	5,581	4,065	0	83	561	9	32,687
32 8/02-8/08	345	Percent	0.2	0.0	1.9	5.3	0.3	8.5	39.8	0.1	0.2	11.3	30.0	0.0	0.1	2.2	0.0	100.0
		Numbers	45	0	429	1,177	70	1,881	8,834	15	55	2,507	6,662	0	20	489	0	22,185
33 8/09-8/15	328	Percent	0.0	0.0	1.1	2.6	1.1	5.0	26.0	0.3	0.0	10.4	51.8	0.0	0.3	1.4	0.0	100.0
		Numbers	9	0	279	663	278	1,298	6,728	69	9	2,698	13,381	0	69	357	0	25,839
Total	2,801	Percent	0.1	0.0	1.5	7.7	0.4	21.8	30.2	0.1	0.3	19.5	16.3	0.0	0.2	1.9	0.1	100.0
		Numbers	127	48	2,479	12,680	682	35,978	49,898	84	474	32,159	26,928	25	398	3,060	88	165,108

Table 40.—Estimated age composition of Spiridon Bay (Telrod Cove: 254-50) Special Harvest Area sockeye salmon catch by week, 2009.

Week	Sample Size	Age										Total	
		1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2			
26 6/21-6/27	211	Percent	0.1	0.9	8.2	0.0	64.0	15.8	0.1	10.6	0.4	100.0	
		Numbers	8	120	1,124	0	8,729	2,151	8	1,452	56	13,648	
27 6/28-7/04	224	Percent	0.3	0.5	13.6	0.2	56.8	19.1	0.3	9.1	0.0	100.0	
		Numbers	81	118	3,279	41	13,705	4,600	81	2,195	8	24,108	
28 7/05-7/11	208	Percent	0.1	0.4	20.0	0.9	50.2	19.4	0.1	8.8	0.0	100.0	
		Numbers	26	95	4,280	185	10,730	4,144	15	1,889	0	21,365	
29 7/12-7/18	251	Percent	0.6	0.1	31.4	2.1	30.2	30.2	0.0	5.5	0.0	100.0	
		Numbers	44	5	2,391	156	2,298	2,294	0	417	0	7,605	
30 7/19-7/25	112	Percent	0.2	0.0	37.7	3.5	27.7	25.5	0.0	5.3	0.0	100.0	
		Numbers	10	0	1,805	168	1,327	1,223	0	255	0	4,788	
31 7/26-8/01	200	Percent	1.9	0.0	34.2	4.0	28.9	25.5	0.0	5.5	0.0	100.0	
		Numbers	114	0	2,048	238	1,731	1,524	0	329	0	5,984	
32-33 8/02-8/15	0	Percent	2.0	0.0	34.0	4.0	29.0	25.5	0.0	5.5	0.0	100.0	
		Numbers	85	0	1,437	169	1,226	1,078	0	232	0	4,227	
Total		Percent	0.4	0.4	20.0	1.2	48.6	20.8	0.1	8.3	0.1	100.0	
		Numbers	366	339	16,364	958	39,746	17,014	104	6,769	64	81,725	

Table 41.—Length composition of Spiridon Bay (Telrod Cove: 254-50) Special Harvest Area sockeye salmon catch samples by age and sex, 2009.

	Age								Total
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.2	
Females									
Mean Length (mm)	0	510	567	579	0	535	569	560	547
SE	-	3	1	-	-	2	3	-	1
Range	0-0	403-587	506-634	579-579	0-0	430-579	530-621	560-560	403-634
Sample Size	0	120	278	1	0	155	37	1	592
Males									
Mean Length (mm)	368	527	597	0	390	564	598	0	561
SE	9	3	2	-	5	3	4	-	3
Range	337-400	418-645	518-663	0-0	359-452	356-623	549-662	0-0	337-663
Sample Size	6	126	189	0	18	114	35	0	488
All Fish									
Mean Length (mm)	368	518	579	579	390	548	583	560	553
SE	9	2	1	-	5	2	3	-	1
Range	337-400	403-645	506-663	579-579	359-452	356-623	530-662	560-560	337-663
Sample Size	6	246	467	1	18	269	72	1	1,080

Table 42.—Estimated sex composition of Spiridon Bay (Telrod Cove: 254-50) Special Harvest Area sockeye salmon catch by week, 2009.

Week	Dates	Sample Size			Percent			Harvest		
		Females	Males	Total	Females	Males	Females	Males	Total	
26	6/21-6/27	112	126	238	47.5	52.5	6,483	7,165	13,648	
27	6/28-7/04	131	129	260	50.2	49.8	12,109	11,999	24,108	
28	7/05-7/11	122	118	240	51.2	48.8	10,929	10,436	21,365	
29	7/12-7/18	158	117	275	57.3	42.7	4,358	3,247	7,605	
30	7/19-7/25	76	44	120	62.8	37.2	3,007	1,781	4,788	
31	7/26-8/01	134	86	220	61.0	39.0	3,652	2,332	5,984	
32-33	8/02-8/15	0	0	0	60.9	39.1	2,575	1,652	4,227	
Total		733	620	1,353	52.8	47.2	43,112	38,613	81,725	

Table 43.—Estimated sex and age composition of Foul Bay (251-41) and Waterfall Bay (251-84) Special Harvest Areas commercial sockeye salmon, 2009.

Special Harvest Area	Week	Sample Size	Percent		Percent Numbers	Age					Total	
			Females	Males		1.1	1.2	2.1	1.3	2.2		
Foul Bay SHA	24 6/07-7/04	328	50.4	49.6	Percent Numbers	10.1 655	35.7 2,321	0.3 20	42.4 2,758	4.3 278	7.3 476	100.0 6,508
Waterfall SHA	24-25 6/07-6/20	542	53.4	46.6	Percent Numbers	5.7 133	79.4 1,869	0.0 0	10.3 243	2.7 64	1.8 43	100.0 2,353

Table 44.-Length composition of Foul Bay SHA (251-41) and Waterfall Bay SHA (251-84) sockeye salmon catch samples by age and sex, 2009.

Foul Bay SHA	Age						Total
	1.1	1.2	1.3	2.1	2.2	2.3	
Females							
Mean Length (mm)	0	488	538	0	501	536	515
SE	-	3	4	-	9	9	3
Range	0-0	423-563	459-612	0-0	463-528	487-592	423-612
Sample Size	0	63	68	0	7	13	151
Males							
Mean Length (mm)	340	511	559	322	528	553	494
SE	4	4	6	-	20	13	7
Range	304-388	447-578	342-622	322-322	429-579	493-606	304-622
Sample Size	33	49	57	1	7	8	155
All Fish							
Mean Length (mm)	340	498	548	322	515	542	504
SE	4	3	3	-	11	7	4
Range	304-388	423-578	342-622	322-322	429-579	487-606	304-622
Sample Size	33	112	125	1	14	21	306

Waterfall Bay SHA	Age						Total
	1.1	1.2	1.3	2.1	2.2	2.3	
Females							
Mean Length (mm)	0	494	532		480	555	498
SE	-	2	5		7	11	2
Range	0-0	400-566	460-580		460-511	530-582	400-582
Sample Size	0	257	28		9	4	298
Males							
Mean Length (mm)	351	513	543		483	562	509
SE	8	2	6		9	14	3
Range	330-435	420-570	443-583		466-498	519-600	330-600
Sample Size	13	195	26		3	6	243
All Fish							
Mean Length (mm)	351	502	537		480	559	503
SE	8	1	4		6	9	2
Range	330-435	400-570	443-583		460-511	519-600	330-600
Sample Size	13	452	54		12	10	541

Table 45.—Estimated age composition of Inner and Outer Ayakulik and Halibut Bay sections (256-10, 15, 20, 25, 30) commercial sockeye salmon catch, 2009.

Week	Sample Size	Age										Total
		1.1	0.3	1.2	2.1	1.3	2.2	2.3	3.2	3.3		
30 7/19-7/25	347	Percent	0.0	0.3	16.2	1.3	8.3	65.1	7.7	0.9	0.3	100.0
		Numbers	12	125	7,710	612	3,953	30,978	3,650	422	125	47,587
32 8/02-8/08	359	Percent	0.3	0.0	19.8	5.6	7.8	56.0	9.5	1.1	0.0	100.0
		Numbers	72	0	5,129	1,445	2,023	14,520	2,456	289	0	25,933
33-35 8/09-8/29	0	Percent	0.3	0.0	19.8	5.6	7.8	56.0	9.5	1.1	0.0	100.0
		Numbers	15	0	1,042	294	411	2,951	499	59	0	5,270
Total	706	Percent	0.1	0.2	17.6	3.0	8.1	61.5	8.4	1.0	0.2	100.0
		Numbers	99	125	13,881	2,350	6,387	48,448	6,605	770	125	78,790

Table 46.—Estimated age composition of Olga Bay, Alitak Bay, and Moser Bay sections (257-40, 41, 43) commercial sockeye salmon catch, 2009.

Week	Sample Size	Age														Total	
		0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	3.4	4.3		
24 6/07-6/13	374	Percent	0.2	1.7	12.2	0.0	0.0	35.2	18.9	0.0	21.2	1.9	0.0	8.7	0.0	0.0	100.0
		Numbers	75	554	4,046	0	0	11,658	6,258	0	7,012	629	0	2,892	0	15	33,139
25 6/14-6/20	342	Percent	0.0	3.1	9.0	0.0	0.0	29.3	29.5	0.0	18.5	3.5	0.0	6.8	0.1	0.2	100.0
		Numbers	9	1,162	3,381	0	0	11,022	11,111	0	6,944	1,308	8	2,542	24	92	37,602
26 6/21-6/27	359	Percent	0.0	1.1	7.3	0.0	0.0	16.2	48.6	0.0	15.9	4.9	0.2	4.9	0.7	0.1	100.0
		Numbers	0	420	2,700	0	0	5,982	17,922	0	5,875	1,822	83	1,808	248	21	36,880
27 6/28-7/04	355	Percent	0.0	0.3	6.0	0.1	0.0	15.9	50.4	0.0	14.8	7.4	0.1	4.6	0.4	0.0	100.0
		Numbers	0	119	2,696	67	0	7,174	22,776	0	6,699	3,349	59	2,094	178	0	45,212
28 7/05-7/11	368	Percent	0.0	0.8	5.1	0.1	0.0	15.0	47.9	0.0	18.5	8.3	0.0	4.3	0.0	0.0	100.0
		Numbers	0	446	2,812	40	0	8,260	26,449	0	10,217	4,593	0	2,390	0	0	55,206
29 7/12-7/18	370	Percent	0.0	1.1	4.0	0.0	0.0	21.6	46.0	0.0	16.9	4.5	0.0	5.7	0.0	0.0	100.0
		Numbers	0	280	979	0	7	5,312	11,297	0	4,159	1,105	7	1,412	7	0	24,566
30 7/19-7/25	380	Percent	0.0	1.6	4.2	0.0	0.2	25.6	43.1	0.0	18.1	2.4	0.2	4.3	0.2	0.0	100.0
		Numbers	0	110	290	0	16	1,769	2,983	0	1,255	163	16	299	17	0	6,917
31 7/26-8/01	365	Percent	0.0	2.4	5.4	0.0	0.0	20.9	59.6	0.0	7.8	2.3	0.0	1.4	0.2	0.0	100.0
		Numbers	0	711	1,556	0	0	6,081	17,331	0	2,266	676	0	394	56	0	29,071
32 8/02-8/08	242	Percent	0.0	0.5	7.4	0.0	0.0	15.1	72.6	0.0	4.2	0.1	0.0	0.0	0.0	0.0	100.0
		Numbers	14	154	2,296	0	14	4,705	22,606	14	1,316	22	0	13	2	0	31,155
33 8/09-8/15	0	Percent	0.1	0.5	8.0	0.0	0.1	12.5	74.5	0.1	4.1	0.0	0.0	0.0	0.0	0.0	100.0
		Numbers	8	31	532	0	8	831	4,933	8	270	0	0	0	0	0	6,620
34 8/16-8/22	373	Percent	0.3	0.5	9.4	0.0	0.3	7.4	77.9	0.3	4.0	0.0	0.0	0.0	0.0	0.0	100.0
		Numbers	180	363	6,348	0	180	4,999	52,904	180	2,731	0	0	0	0	0	67,884
35-37 8/23-9/12	0	Percent	0.3	0.5	9.4	0.0	0.3	7.2	78.0	0.3	4.0	0.0	0.0	0.0	0.0	0.0	100.0
		Numbers	76	151	2,649	0	76	2,044	22,027	76	1,135	0	0	0	0	0	28,234
Total	3,528	Percent	0.1	1.1	7.5	0.0	0.1	17.4	54.3	0.1	12.4	3.4	0.0	3.4	0.1	0.0	100.0
		Numbers	361	4,499	30,285	107	300	69,835	218,598	277	49,880	13,666	173	13,845	532	128	402,486

Table 47.—Estimated age composition of Kitoi Bay Section (252-32) commercial chum salmon catch, 2009.

Week	Sample Size	Age			Total	
		0.2	0.3	0.4		
24 6/07-6/13	0	Percent	8.6	81.9	9.5	100.0
		Numbers	62	592	69	723
25 6/14-6/20	105	Percent	10.3	79.9	9.7	100.0
		Numbers	598	4,638	565	5,801
26 6/21-6/27	203	Percent	22.1	66.6	11.3	100.0
		Numbers	1,084	3,268	552	4,904
31-36 7/26-9/5	0	Percent	22.7	66.0	11.3	100.0
		Numbers	415	1,209	207	1,831
Total		Percent	16.3	73.2	10.5	100.0
		Numbers	2,159	9,707	1,394	13,259

Table 48.—Spiridon Lake sockeye salmon estimated catch by area and estimated total run by age class, 2009.

Area	Sample Size										Total		
		1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2			
<i>Estimated Spiridon Catch by Area</i>													
Spiridon Bay Special Harvest Area (SBSHA-Telrod Cove: 254-50)													
1,206	Percent	0.4	0.4	20.0	1.2	48.6	20.8	0.1	8.3	0.1	100.0		
	Numbers	366	339	16,364	958	39,746	17,014	104	6,769	64	81,725		
SW Afognak Section and NW Kodiak District													
	Percent ^a	0.4	0.4	20.0	1.2	48.6	20.8	0.1	8.3	0.1	100.0		
	Numbers ^b	328	304	14,677	859	35,649	15,260	94	6,072	58	73,300		
Total Run													
	Percent	0.4	0.4	20.0	1.2	48.6	20.8	0.1	8.3	0.1	100.0		
	Numbers	694	642	31,041	1,817	75,395	32,274	198	12,841	122	155,025		

^a Age composition based on samples collected at SBSHA.

^b The estimate of Spiridon contribution in the commercial harvest was quantified via visual Scale Pattern Analysis (SPA) of the Uyak and Uganik-Viekoda-Kupreanof commercial scale samples utilizing the unique scale pattern of the Spiridon age-2.2 fish.

Table 49.—Karluk Lake early-run sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2009.

Area	Sample Size	Age														Total		
		1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	4.1	2.4	3.3	2.5	3.4	4.3			
<i>Estimated Karluk Early-Run Catch by Area</i>																		
Uyak Bay (254-10 - 254-40)																		
	1,419	Percent	9.7	0.0	1.5	27.4	0.0	0.1	25.5	20.7	0.0	1.2	13.5	0.0	0.4	0.0		
		Numbers	710	0	111	2,006	0	6	1,866	1,516	0	88	991	0	27	0		
Uganik-Viekoda-Kupreanof (253-11 - 253-35)																		
	1,446	Percent	9.6	0.0	1.5	27.1	1.8	0.1	25.2	25.1	0.0	0.6	8.5	0.0	0.6	0.0		
		Numbers	837	0	131	2,365	154	7	2,200	2,193	0	52	743	0	51	0		
Total Catch	2,865	Percent	9.6	0.0	1.5	27.2	1.0	0.1	25.3	23.1	0.0	0.9	10.8	0.0	0.5	0.0		
		Numbers	1,546	0	243	4,371	154	13	4,065	3,709	0	140	1,734	0	79	0		
<i>Karluk Early-Run Escapement</i>																		
	622	Percent	8.5	2.4	1.3	24.0	8.6	0.1	22.3	23.0	1.2	1.1	6.0	0.1	1.3	0.1		
		Numbers	4,483	1,257	704	12,673	4,546	36	11,786	12,169	621	558	3,148	59	692	65		
Total Run	3,487	Percent	8.8	1.8	1.4	24.8	6.8	0.1	23.0	23.1	0.9	1.0	7.1	0.1	1.1	0.1		
		Numbers	6,029	1,257	946	17,044	4,700	49	15,852	15,878	621	698	4,882	59	771	65		
																68,852		

Note: Catches were apportioned to Karluk using an age-3. marker.

Table 50.—Karluk Lake early-run sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age															Total Return/ Return Spawner		
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	4.1	2.4	3.3	4.2	8yo	9yo
1976	204,037																	0	
1977	185,312																	0	0
1978	248,741																	0	0
1979	212,872																	0	0
1980	132,396							0	11,635	193,760	4,085	0	103,899	60,395	0	0	37,689	0	0
1981	97,937			0	8,558	18,604	0	3,735	278,831	1,672	0	117,158	38,129	0	272	22,433	0	0	0
1982	122,705	0	1,244	841	4,650	5,466	0	21,058	197,293	4,169	0	93,560	37,079	0	0	20,728	0	0	320
1983	215,620	0	143	564	8,159	7,032	0	14,244	149,947	1,728	0	183,829	33,945	0	337	14,082	0	0	0
1984	288,422	0	0	0	4,090	8,393	0	5,830	97,537	738	0	94,258	30,589	0	908	19,634	0	0	0
1985	316,688	0	0	24	4,258	2,842	0	3,969	72,857	3,010	0	88,599	57,934	0	1,955	40,331	0	68	0
1986	358,756	24	0	337	6,152	2,201	346	6,443	87,691	4,031	94	129,381	131,218	0	479	61,223	1,508	348	0
1987	354,094	427	0	1,456	958	2,884	0	8,503	114,504	19,876	416	44,051	337,905	0	285	60,244	2,309	2,659	0
1988	296,510	0	0	0	8,383	6,297	0	9,708	84,322	13,770	0	37,096	202,729	0	320	70,357	231	2,945	0
1989	349,753	0	1,621	0	8,492	7,624	0	13,979	104,564	5,517	0	167,751	101,296	0	1	69,709	5,362	1,713	0
1990	196,197	0	181	0	18,149	2,780	0	50,649	79,156	6,586	652	146,751	97,063	0	269	70,863	760	0	0
1991	243,069	0	1,224	1,062	26,661	12,015	0	83,430	326,422	7,087	0	127,809	81,364	809	107	12,113	2,476	247	0
1992	217,152	0	2,669	4	9,627	9,642	0	13,159	52,730	14,935	0	42,891	58,375	0	769	36,603	0	79	0
1993	261,169	2	1,534	350	3,309	18,252	0	7,718	226,377	2,275	0	128,158	35,029	0	1,752	42,563	437	288	0
1994	260,771	0	1,017	0	8,956	7,266	0	41,179	294,780	1,857	427	182,133	54,148	0	587	33,887	1,781	1,042	0
1995	238,079	0	218	0	23,268	13,106	0	33,004	231,809	3,463	0	245,934	83,559	0	1,405	52,470	835	492	0
1996	250,357	0	0	0	2,063	5,959	0	2,217	253,847	2,326	0	215,129	84,029	0	61	42,035	0	1,575	0
1997	252,859	0	0	1,838	3,930	11,696	0	6,691	233,964	3,274	0	131,879	63,748	0	0	24,066	0	0	0
1998	252,298	0	574	0	4,258	19,885	0	5,410	531,206	4,517	532	168,024	104,530	715	0	14,578	0	0	0
1999	392,419	0	898	0	15,382	28,948	0	33,620	432,204	10,393	76	192,314	80,270	0	0	48,461	0	116	0
2000	291,351	0	939	0	9,611	4,286	0	3,393	223,141	6,013	129	109,252	78,082	0	483	74,506	523	1,561	0
2001	338,799	0	0	0	3,223	6,573	0	1,102	216,151	5,644	0	274,770	51,394	0	3,144	42,585	425	895	605,906
2002	456,842	0	78	0	4,894	11,188	0	7,592	69,773	1,251	99	59,363	12,086	0	698	4,882	0		
2003	451,856	0	0	286	2,237	9,403	0	1,150	30,926	638	49	15,852	15,878	621					
2004	393,468	760	0	99	196	390	0	946	17,044	4,700									
2005	283,860	0	279	0	6,029	1,257													
2006	202,366	0	0																
2007	294,740																		
2008	82,191																		
2009	52,798																		

10-year average (1992-2001): 593,321 2.2

Table 51.—Karluk Lake late-run sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2009.

Area	Sample Size	Age														Total		
		1.1	1.2	2.1	1.3	2.2	3.1	2.3	3.2	4.1	2.4	3.3	4.2	8yo	9yo			
<i>Estimated Karluk Late-Run Catch by Area</i>																		
Uyak Bay (254-10 - 254-40)																		
1,737	Percent	0.0	0.1	0.1	0.2	4.8	0.3	4.9	82.7	0.0	0.0	6.7	0.0	0.2	0.0	30,719		
	Numbers	0	41	16	53	1,468	84	1,514	25,413	0	1	2,069	0	61	0			
Uganik-Viekoda-Kupreanof (253-11 - 253-35)																		
1,768	Percent	0.0	0.1	0.0	0.2	4.8	0.0	4.9	83.2	0.0	0.0	6.8	0.0	0.0	0.0	21,785		
	Numbers	0	29	0	37	1,044	0	1,077	18,120	0	1	1,477	0	0	0			
Total Catch	3,505	Percent	0.0	0.1	0.0	0.2	4.8	0.2	4.9	82.9	0.0	0.0	6.8	0.0	0.1	0.0		
		Numbers	0	70	16	90	2,512	84	2,591	43,532	0	1	3,547	0	61	0	52,504	
<i>Karluk Late-Run Escapement</i>																		
1,256	Percent	0.0	0.1	0.7	0.2	4.6	3.9	4.7	81.5	0.1	0.0	4.1	0.0	0.1	0.0	277,279		
	Numbers	15	353	2,006	453	12,650	10,889	13,044	225,869	348	8	11,334	99	201	10			
Total Run	4,761	Percent	0.0	0.1	0.6	0.2	4.6	3.3	4.7	81.7	0.1	0.0	4.5	0.0	0.1	0.0		
	Numbers	15	423	2,022	543	15,162	10,973	15,635	269,401	348	9	14,881	99	262	10	329,783		

Note: Catches were apportioned to Karluk using an age-3. marker.

Table 52.—Karluk Lake late-run sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age															Total Return	Return/ Spawner		
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	4.2	8yo	9yo	
1976	319,459																		0	
1977	366,936																		0	0
1978	112,194																		0	0
1979	248,908																		0	0
1980	14,227																		0	0
1981	124,769																		0	0
1982	41,702	0	0	0	0	0	1,261	0	5,239	290,631	606	0	110,997	34,711	0	19,631	0	0	0	
1983	220,795	0	0	0	4,079	4,160	12,830	0	480	241,803	1,268	31	213,452	42,156	2,070	47,370	0	0	569,699	
1984	131,846	0	885	0	0	445	6,246	0	30,516	424,123	0	937	303,542	271,018	471	71,764	651	0	1,110,598	
1985	679,260	169	0	0	1,084	30,165	212	189	60,235	784,914	494	595	493,743	421,972	462	43,998	0	42	1,838,274	
1986	528,415	0	893	0	15,519	39,109	978	105	57,974	835,214	1,162	0	114,862	655,219	563	60,240	325	1,770	0	1,783,933
1987	412,157	106	5,976	201	17,067	24,703	1,737	0	550	226,552	2,373	0	23,389	320,723	79	54,451	1,600	0	0	679,507
1988	282,306	0	2,531	111	2,424	4,649	1,512	0	3,127	189,196	7,249	0	71,078	212,649	0	16,740	0	9	0	511,274
1989	758,893	0	3,555	799	3,717	5,909	12,607	0	3,302	308,439	6,233	0	151,212	214,110	0	12,030	950	0	0	722,863
1990	541,891	0	3,591	971	6,292	16,995	3,241	0	10,310	447,371	1,085	18	52,479	80,226	591	62,392	1,095	64	0	686,721
1991	831,970	0	7,113	340	2,879	16,292	3,023	0	8,568	340,535	4,731	52	191,311	85,334	952	13,107	659	111	0	675,007
1992	614,262	0	1,567	1,923	0	3,880	6,759	0	12,234	57,188	5,043	0	76,196	138,987	513	28,379	0	0	0	332,669
1993	396,288	0	0	1,501	2,860	3,550	17,168	0	11,541	412,758	1,362	36	202,913	75,591	0	23,523	0	0	0	752,802
1994	587,258	0	0	198	1,192	24,718	4,323	0	17,261	616,350	1,008	0	159,094	109,890	551	41,274	821	128	0	976,808
1995	504,977	0	1,156	0	3,219	48,766	8,685	0	1,839	353,857	5,252	0	390,880	129,216	424	28,253	405	1,668	0	973,619
1996	323,969	0	540	633	0	2,970	108	0	469	283,071	2,817	0	149,445	139,820	0	83,431	0	934	0	664,238
1997	311,902	0	0	407	0	1,473	21,821	0	291	494,043	18,682	0	268,631	235,707	0	12,330	0	421	0	1,053,807
1998	384,848	0	0	136	0	586	33,787	1,399	2,716	923,141	8,407	0	78,063	143,454	0	12,558	0	284	0	1,204,530
1999	589,119	0	0	0	0	25,117	41,401	0	7,645	403,399	3,410	85	154,603	210,642	0	65,446	0	302	0	912,050
2000	445,393	155	669	51	3,376	6,049	270	0	1,126	531,303	2,955	0	292,380	55,025	2,875	100,967	1,046	4,014	10	1,002,271
2001	524,739	0	0	0	0	2,543	5,375	0	2,611	132,216	3,786	0	305,575	113,907	13,374	38,224	0	262		617,873
2002	408,734	0	0	62	2,790	3,319	12,383	0	6,844	183,353	672	361	161,086	25,895	9	14,881	99			
2003	626,854	0	0	208	1,750	2,494	1,544	0	1,887	41,395	2,247	0	15,635	269,401						
2004	326,466	0	277	5	301	1,998	510	0	543	15,162	10,973									
2005	498,102	0	3,532	63	0	423	2,022													
2006	288,007	0	0	15																
2007	251,835	0																		
2008	164,299																			
2009	277,280																			
																	10-year average (1992-2001):	849,067	2.0	

Table 53.—Ayakulik River (Red L.) sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2009.

Area	Sample Size	Age												Total		
		1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3			
<i>Estimated Ayakulik Catch by Area</i>																
Inner and Outer Ayakulik sections (256-10, -15, -20)																
	706	Percent	0.1	0.2	17.6	3.0	0.0	8.1	61.5	0.0	8.4	1.0	0.0	0.2	100.0	
		Numbers	83	105	11,715	1,984	0	5,390	40,887	0	5,574	650	0	105	66,493	
Halibut Bay Section (256-25, -30)																
		Percent	0.1	0.2	17.6	3.0	0.0	8.1	61.5	0.0	8.4	1.0	0.0	0.2	100.0	
		Numbers	5	6	721	122	0	332	2,518	0	343	40	0	6	4,095	
Total Catch	706	Percent	0.1	0.2	17.6	3.0	0.0	8.1	61.5	0.0	8.4	1.0	0.0	0.2	100.0	
		Numbers	89	112	12,436	2,106	0	5,722	43,405	0	5,917	690	0	112	70,588	
<i>Ayakulik (Red Lake) Escapement</i>																
	2,499	Percent	2.7	0.2	27.6	3.5	0.0	17.1	38.3	0.0	9.6	0.7	0.2	0.1	100.0	
		Numbers	8,556	582	87,094	11,133	152	53,822	120,569	152	30,150	2,296	477	199	315,184	
Total Run	3,205	Percent	2.2	0.2	25.8	3.4	0.0	15.4	42.5	0.0	9.3	0.8	0.1	0.1	100.0	
		Numbers	8,645	694	99,530	13,239	152	59,544	163,974	152	36,068	2,986	477	311	385,772	

Table 54.—Ayakulik River (Red L.) sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age													Total Return	Return/ Spawner			
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4		
1976	219,047	0	0	5,835	3,855	405,330	8,408	0	164,495	187,009	0	0	61,395	0	0	0	0	836,328	3.8
1977	306,982	0	0	0	0	5,060	3,431	0	18,656	170,721	0	0	85,541	3,940	0	0	0	287,349	0.9
1978	132,864	0	0	0	0	1,556	15,799	0	14,937	45,081	0	0	42,151	2,747	0	0	0	122,273	0.9
1979	222,270	0	0	3,625	441	16,345	18,352	0	40,958	131,539	0	0	41,815	1,438	0	0	0	254,511	1.1
1980	774,328	0	0	11,780	13,347	402,761	24,781	0	232,583	305,083	0	0	159,440	2,762	0	0	0	1,152,537	1.5
1981	279,200	0	0	17,149	0	310,784	7,450	0	230,889	328,622	0	0	168,527	28,564	0	0	0	1,091,984	3.9
1982	169,678	0	0	6,857	7,500	1,626	2,596	0	16,351	123,667	0	0	77,129	4,751	0	0	0	240,476	1.4
1983	171,415	0	0	548	1,171	20,198	15,116	0	72,231	168,055	0	0	104,765	0	0	0	0	382,085	2.2
1984	283,215	0	0	7,779	3,311	138,185	78,899	0	72,319	197,026	0	0	103,450	3,347	0	0	0	604,316	2.1
1985	388,759	0	0	61,345	3,903	365,489	18,971	0	589,731	513,314	0	0	229,750	4,276	0	0	0	1,786,779	4.6
1986	318,135	0	0	4,480	38,326	571,371	6,489	0	506,463	365,644	0	0	231,471	5,967	0	0	0	1,730,211	5.4
1987	261,913	0	0	12,991	15,380	173,341	13,602	0	103,512	317,142	0	0	341,728	32,807	0	5,063	0	1,015,566	3.9
1988	291,774	0	0	2,822	3,351	81,584	2,832	0	62,159	126,124	0	0	27,783	10,655	0	8,225	0	325,535	1.1
1989	768,101	0	0	2,571	5,565	26,297	29,189	0	18,318	310,379	0	0	254,557	59,553	0	46,238	0	752,667	1.0
1990	371,282	0	0	1,028	8,047	3,618	14,638	0	59,035	295,167	0	0	202,600	16,202	0	102	38	600,475	1.6
1991	384,859	0	640	22,371	17,118	145,925	36,123	0	393,249	482,187	0	19	158,923	5,779	64	2,796	112	1,265,306	3.3
1992	344,184	0	4,591	2,578	9,900	65,889	24,694	205	10,135	200,817	2,188	2,685	230,460	19,788	1,983	6,010	112	582,035	1.7
1993	286,170	0	0	3,093	3,678	2,504	16,283	400	176,539	409,718	516	8,075	138,504	7,591	344	5,426	0	772,671	2.7
1994	380,181	0	465	42,711	7,275	555,246	35,908	17,036	338,728	344,937	546	79	102,628	7,224	401	1,737	0	1,454,921	3.8
1995	317,832	0	0	4,711	4,707	101,292	18,181	516	53,759	227,822	3,186	0	240,294	22,068	1,125	6,135	0	683,795	2.2
1996	337,155	0	269	1,770	17,050	16,902	8,589	332	93,851	198,161	364	0	143,934	802	291	244	0	482,559	1.4
1997	308,214	0	5	1,250	4,810	14,447	5,395	597	11,767	34,814	330	0	16,169	727	0	1,490	0	91,802	0.3
1998	427,208	62	0	4,554	597	29,683	2,929	0	12,657	97,574	1,470	602	46,305	10,818	234	4,760	40	212,288	0.5
1999	295,717	0	0	2,953	4,818	53,015	8,754	353	124,906	192,030	0	240	80,066	4,301	658	1,930	0	474,025	1.6
2000	208,651	130	0	2,261	7,074	56,453	5,858	0	40,660	148,872	148	0	26,019	893	539	2,481	0	291,390	1.4
2001	218,892	0	0	97	0	21,217	4,756	0	12,812	57,133	0	315	95,615	2,218	299	142	0	194,605	0.9
2002	229,292	0	0	499	121	13,352	4,881	141	61,713	162,634	214	1,386	67,474	189	477	311	0	313,392	1.4
2003	197,892	0	40	2,224	1,086	47,900	5,678	0	47,986	88,088	0	152	36,068	2,986	0	0	0	0	0
2004	275,238	0	0	2,445	3,358	24,944	5,073	152	59,544	163,974	0	0	0	0	0	0	0	0	0
2005	251,906	0	67	5,423	694	99,530	13,239	0	0	0	0	0	0	0	0	0	0	0	0
2006	87,780	0	0	8,645	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	283,042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	162,888	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	315,184	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-year average (1993-2002):															497,145	1.6			

Table 55.—Frazer Lake (Dog Salmon Creek) sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2009.

Area	Sample Size	Age												Total		
		1.1	1.2	2.1	1.3	2.2	2.3	3.2	2.4	3.3	3.4	4.3				
<i>Estimated Frazer Catch by Area</i>																
Olga, Moser, and Alitak Bay gillnet sections (257-40, -43, -41) adjusted 95% for other stocks.																
3,898	Percent	0.0	6.6	0.0	20.0	44.7	16.1	6.1	0.1	6.2	0.2	0.1	100.0			
	Numbers	0	13,975	95	42,314	94,737	34,043	12,982	139	13,153	505	121	212,065			
Cape Alitak and Humpy-Deadman sections (257-10, -20, -50, -60, -70) adjusted 80% for other stocks.																
0	Percent	0.0	5.9	2.2	18.2	46.5	15.4	6.0	0.1	5.3	0.3	0.1	100.0			
	Numbers	0	6,751	2,582	20,986	53,483	17,725	6,962	92	6,150	318	66	115,114			
Total Catch	3,898	Percent	0.0	6.3	0.8	19.3	45.3	15.8	6.1	0.1	5.9	0.3	0.1	100.0		
		Numbers	0	20,726	2,677	63,300	148,220	51,768	19,944	230	19,303	823	187	327,178		
<i>Dog Salmon Creek Escapement</i>																
1,688	Percent	0.1	9.0	4.4	18.7	33.3	19.8	7.7	0.1	6.6	0.2	0.1	100.0			
	Numbers	113	13,279	6,455	27,653	49,238	29,290	11,327	185	9,769	279	212	147,798			
<i>Total Run</i>																
5,586	Percent	0.0	7.2	1.9	19.1	41.6	17.1	6.6	0.1	6.1	0.2	0.1	100.0			
	Numbers	113	34,005	9,131	90,953	197,458	81,058	31,271	415	29,071	1,102	399	474,976			

Table 56.—Frazer Lake (Dog Salmon Creek) sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age														Total Return/	Return/ Spawner		
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	4.1	2.4	4.2	3.3	8yo		
1976	119,321	0	2,150	0	223,444	8,753	73,677	257,625	0	0	143,383	0	0	0	0	393	0	709,424	5.9
1977	139,548	0	2,764	0	73,189	2,928	92,211	107,917	0	0	146,064	393	0	0	0	0	0	425,466	3.0
1978	141,981	0	7,807	0	162,130	507	24,148	22,970	0	0	16,844	0	0	0	0	638	0	235,043	1.7
1979	126,742	0	507	0	1,374	982	2,965	24,323	0	0	26,791	0	0	0	0	2,165	0	59,106	0.5
1980	405,535	0	0	0	6,064	16,305	7,654	589,393	0	0	141,065	684	0	46	0	52	0	761,264	1.9
1981	377,716	0	876	0	12,120	0	2,455	7,748	0	172	5,239	0	0	0	0	862	0	29,471	0.1
1982	430,423	0	1,276	0	23,647	431	28,624	3,735	24	754	10,870	10,812	0	0	0	0	0	80,172	0.2
1983	158,340	0	10	26	8,935	9,729	13,438	380,531	1,604	0	586,833	0	0	0	0	36,986	0	1,038,092	6.6
1984	53,524	0	1,001	0	5,771	33,628	7,437	386,832	0	0	67,142	2,046	0	0	0	0	0	503,856	9.4
1985	485,835	0	192	0	16,502	4,399	49,290	53,978	151	0	22,578	9,032	0	1,595	0	2,694	0	160,412	0.3
1986	126,529	1,393	67,475	0	727,658	40,794	230,893	972,290	0	0	168,815	9,129	0	0	0	8,584	0	2,227,031	17.6
1987	40,544	0	1,787	1,851	3,019	26,596	3,902	187,581	0	0	159,822	104	0	156	0	882	0	385,701	9.5
1988	246,704	0	1,886	0	21,073	7,793	30,096	210,586	133	0	64,565	20,510	0	16	0	7,994	0	364,652	1.5
1989	360,373	0	16,191	208	327,929	12,847	153,078	373,277	5,752	0	300,182	145,325	0	0	0	40,754	0	1,375,543	3.8
1990	226,707	0	1,096	0	18,217	12,986	33,393	400,750	1,678	0	210,744	15,341	0	455	0	9,340	0	704,000	3.1
1991	190,358	0	621	0	2,031	57,463	1,728	330,834	302	0	105,361	630	0	0	0	0	0	498,970	2.6
1992	185,825	0	3,545	0	20,513	78,168	27,471	211,959	4,666	0	185,148	18,141	0	0	0	2,209	0	551,819	3.0
1993	178,391	0	2,529	45	12,677	41,759	56,178	291,218	4,831	0	64,155	17,867	0	256	0	5,830	0	497,344	2.8
1994	206,071	0	2,056	0	23,034	17,688	39,741	112,849	1,048	0	77,546	15,427	0	187	0	15,733	0	305,309	1.5
1995	196,323	0	10,106	0	59,574	39,574	77,223	152,287	1,251	0	251,356	11,284	0	815	0	5,387	0	608,857	3.1
1996	198,695	0	20,062	0	41,983	22,276	81,667	32,786	26	1,641	50,325	101	0	191	0	201	0	251,259	1.3
1997	205,264	0	626	0	8,327	1,639	9,831	14,560	231	630	15,665	2,251	0	0	0	0	77	53,837	0.3
1998	233,755	0	367	0	1,374	24,808	14,710	87,861	16,454	0	57,957	88,617	0	366	0	33,880	0	326,394	1.4
1999	216,565	0	1,152	0	3,507	136,968	77	481,220	0	0	241,075	1,299	0	496	0	2,090	97	867,981	4.0
2000	158,044	0	35,476	0	68,494	15,072	219,630	107,018	0	521	58,178	330	0	547	233	289	521	506,309	3.2
2001	154,349	0	814	0	21,700	557	5,639	3,657	23,842	131	11,476	29,633	293	776	718	81,003	1,501	181,739	1.2
2002	85,317	0	335	0	5,659	14,124	5,844	27,492	11,173	0	44,559	35,868	0	415	0	29,071	174,542	2.0	
2003	201,679	0	3,365	0	8,565	58,042	16,372	170,743	2,948	0	81,058	31,271	0						
2004	120,664	0	14,757	0	148,241	16,861	90,953	197,458	0										
2005	136,949	0	1,993	0	34,005	9,131													
2006	89,516	0	113																
2007	120,185																		
2008	153,276																		
2009	147,798																		

10-Year Average (1993-2002):

377,357

2.1

Table 57.—South Olga Lakes (Upper Station) early-run sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2009.

Area	Sample Size	Age									Total		
		1.1	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4			
<i>Estimated Upper Station Early-Run Catch by Area</i>													
Olga, Moser, and Alitak Bay gillnet sections (257-40, -43, -41) adjusted 95% for other stocks.													
2,168	Percent	0.0	10.3	0.0	30.6	37.7	0.0	21.3	0.0	0.1	100.0		
	Numbers	0	3,286	7	9,716	11,971	0	6,786	0	18	31,784		
Cape Alitak and Humpy-Deadman sections (257-10, -20, -50, -60, -70) adjusted 80% for other stocks.													
0	Percent	0.0	8.8	2.7	26.9	41.7	0.0	19.9	0.0	0.1	100.0		
	Numbers	0	1,309	403	3,986	6,184	0	2,946	0	12	14,839		
Total Catch													
2,168	Percent	0.0	9.9	0.9	29.4	38.9	0.0	20.9	0.0	0.1	100.0		
	Numbers	0	4,595	410	13,702	18,155	0	9,731	0	30	46,623		
<i>Upper Station Early Run Escapement</i>													
1,504	Percent	0.8	3.7	8.8	34.8	41.1	0.3	10.2	0.2	0.0	100.0		
	Numbers	269	1,289	3,037	12,047	14,217	106	3,526	86	6	34,585		
Total Run	3,672	Percent	0.3	7.2	4.2	31.7	39.9	0.1	16.3	0.1	0.0	100.0	
			269	5,884	3,446	25,750	32,372	106	13,258	86	36	81,208	

Table 58.—South Olga Lakes (Upper Station) early-run sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age													Total Return	Return/Spawner		
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	3.3	2.4		
1976	28,567	0	0	0	133	9,722	0	0	10,438	47,090	0	0	27,139	0	0	0	94,522	3.3
1977	26,380	0	0	0	0	32,041	243	0	48,850	94,081	0	0	35,526	634	0	0	211,375	8.0
1978	66,157	0	243	243	1,809	28,948	0	0	32,354	70,735	0	0	19,660	0	37	0	154,029	2.3
1979	53,115	0	0	0	0	4,124	0	0	17,554	65,300	0	46	14,870	38	142	0	102,074	1.9
1980	37,866	0	317	0	2,341	11,937	0	0	4,000	7,165	38	0	7,259	0	25	0	33,082	0.9
1981	77,042	0	0	0	542	2,832	1,498	0	4,370	85,872	0	43	23,861	0	0	0	119,018	1.5
1982	170,610	0	2,472	234	1,006	113,439	781	0	75,684	37,220	0	360	18,131	70	0	0	249,398	1.5
1983	115,890	0	285	1,220	1,181	5,491	1,205	0	11,396	87,555	0	0	41,723	217	0	0	150,273	1.3
1984	96,798	0	109	0	3,443	2,118	66	0	1,792	46,879	0	0	14,103	113	60	0	68,683	0.7
1985	27,408	0	1,476	4	2,865	2,314	22,466	0	6,714	86,949	0	0	42,895	633	64	0	166,380	6.1
1986	100,812	0	35	5,680	449	51,361	936	0	36,048	83,179	60	18	8,248	340	408	0	186,763	1.9
1987	74,747	0	2,134	46	1,022	2,027	3,849	0	726	30,417	27	0	25,242	779	57	0	66,326	0.9
1988	56,724	0	17	0	71	82	852	0	1,607	35,640	210	206	7,282	1,072	0	0	47,038	0.8
1989	64,582	0	450	404	5,823	8,751	6,313	0	5,539	67,810	0	0	34,127	0	0	0	129,217	2.0
1990	56,159	0	1,497	578	0	6,275	3,414	0	19,145	82,269	0	0	6,839	361	6	0	120,384	2.1
1991	50,026	0	407	3,258	20,467	46,391	6,815	0	57,478	131,931	0	0	27,274	0	0	0	294,021	5.9
1992	19,076	52	2,338	223	5,878	5,959	3,583	0	3,435	24,099	0	0	7,268	0	0	0	52,835	2.8
1993	34,852	219	669	605	2,423	5,189	2,741	0	11,812	31,749	0	0	5,168	1,229	0	62	61,866	1.8
1994	37,645	0	229	994	4,887	53,607	1,320	0	7,176	33,104	0	0	17,361	570	0	0	119,248	3.2
1995	41,492	0	185	2,467	5,857	33,691	1,497	360	44,415	44,608	0	492	20,938	689	92	0	155,291	3.7
1996	58,686	0	79	177	2,723	30,487	1,973	0	81,164	51,987	4	25	15,238	281	0	0	184,138	3.1
1997	47,655	0	422	45	0	972	2,438	0	558	11,566	34	0	7,233	795	2,006	0	26,069	0.5
1998	30,713	0	0	6	0	145	6,264	0	418	45,950	0	0	16,490	8	0	0	69,281	2.3
1999	36,521	0	0	2,598	328	27,894	6,080	0	34,497	81,382	0	360	38,405	626	28	0	192,198	5.3
2000	55,761	0	780	10,912	7,338	122,434	2,623	69	59,315	40,862	69	121	9,843	139	235	28	254,768	4.6
2001	66,795	0	1,131	1,123	3,856	6,472	5,116	0	4,335	15,475	0	24	13,764	0	0	0	51,298	0.8
2002	36,802	82	532	382	574	1,295	42	36	4,890	2,815	0	0	8,604	0	0	36	19,289	0.5
2003	76,175	0	75	502	88	10,903	3,245	0	9,334	34,250	0	106	13,258	86				
2004	78,487	0	191	1,553	6,398	36,836	3,258	0	25,750	32,372	0							
2005	60,349	0	233	281	0	5,884	3,446											
2006	24,997	0	0	269														
2007	31,895	0																
2008	38,800																	
2009	34,585																	

10-Year Average (1993-2002): 113,345 2.6

Table 59.—South Olga Lakes (Upper Station) late-run sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2009.

Area	Sample Size	Age													Total		
		0.1	0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4			
<i>Estimated Upper Station Late-Run Catch by Area</i>																	
Olga, Moser, and Alitak Bay gillnet sections (257-40, -43, -41) adjusted 95% for other stocks.																	
1,730	Percent	0.0	0.2	0.0	1.2	8.5	0.0	10.6	74.5	0.0	0.2	4.8	0.0	0.0	100.0		
	Numbers	0	263	0	1,626	11,510	0	14,313	100,960	0	263	6,557	0	8	135,500		
Cape Alitak and Humpy-Deadman sections (257-10, -20, -50, -60, -70) adjusted 80% for other stocks.																	
0	Percent	0.0	0.1	0.0	1.2	5.6	8.0	12.2	69.0	0.0	0.1	3.7	0.0	0.0	100.0		
	Numbers	0	56	0	624	2,909	4,157	6,353	35,835	0	56	1,905	0	9	51,903		
Total Catch																	
1,730		0.0	0.2	0.0	1.2	7.7	2.2	11.0	73.0	0.0	0.2	4.5	0.0	0.0	100.0		
		0	319	0	2,250	14,419	4,157	20,666	136,795	0	319	8,462	0	17	187,403		
<i>Upper Station Late Run Escapement</i>																	
1,321	Percent	0.1	0.4	1.0	0.5	4.0	9.8	5.6	73.7	0.1	0.0	4.2	0.3	0.1	100.0		
	Numbers	218	613	1,561	817	6,514	15,925	9,096	119,162	181	39	6,846	548	218	161,736		
Total Run	3,051	Percent	0.1	0.3	0.4	0.9	6.0	5.8	8.5	73.3	0.1	0.1	4.4	0.2	0.1	100.0	
	Numbers	218	931	1,561	3,067	20,933	20,082	29,761	255,957	181	357	15,308	548	235	349,139		

Table 60.—South Olga Lakes (Upper Station) late-run sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age														Total Return	Return/Spawner	
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	3.3	2.4		
1976	48,650	0	10,190	0	36,479	38,399	2,560	0	11,501	141,154	0	0	10,336	940	0	0	251,559	5.2
1977	49,001	0	640	0	3,137	52,279	1,046	0	66,714	312,897	0	0	9,732	0	0	0	446,444	9.1
1978	38,126	0	82,601	1,046	90,205	134,367	4,698	0	55,146	217,342	0	0	26,755	2,638	0	0	614,798	16.1
1979	134,579	0	31,947	0	63,256	71,366	0	0	103,020	339,950	0	736	10,850	360	280	0	621,765	4.6
1980	77,718	0	124,890	0	56,178	35,951	2,131	0	21,758	55,472	399	0	16,555	965	223	0	314,522	4.0
1981	118,900	0	1,294	0	17,853	157,249	12,280	1,007	149,158	345,506	0	0	14,809	0	0	879	700,035	5.9
1982	306,161	0	644,017	5,129	324,600	364,312	5,029	117	92,824	231,963	0	0	5,168	2,042	0	0	1,675,201	5.5
1983	179,741	4,867	182,514	0	135,177	23,242	1,682	0	53,195	92,799	0	0	30,036	0	1,488	0	525,000	2.9
1984	239,608	3,012	37,733	528	89,721	187,451	5,064	0	21,543	224,033	0	0	23,712	4,642	0	0	597,438	2.5
1985	408,409	2,313	562,757	1,958	309,775	34,924	12,374	0	40,759	179,839	0	578	45,289	6,140	0	0	1,196,706	2.9
1986	367,922	1,449	72,415	1,953	94,380	291,815	5,610	678	116,039	451,917	0	0	17,721	1,579	1,289	6	1,056,851	2.9
1987	156,274	0	68,016	495	113,821	12,899	127	0	17,053	104,995	0	225	27,470	15,072	39	0	360,212	2.3
1988	247,647	0	9,222	216	27,793	76,583	1,000	0	71,330	80,102	177	133	4,037	1,244	0	0	271,836	1.1
1989	221,706	401	169,158	1,125	85,530	83,807	12,864	142	53,928	184,067	308	0	21,693	0	0	0	613,023	2.8
1990	198,287	1,432	56,992	3,904	115,907	27,747	7,728	444	17,591	237,284	0	0	4,315	0	67	0	473,411	2.4
1991	242,860	6,744	51,810	4,858	163,283	73,541	6,484	160	44,507	712,676	31	0	20,546	0	0	0	1,084,640	4.5
1992	199,067	4,913	61,018	1,108	15,733	58,923	12,611	79	6,302	279,349	0	0	7,189	156	192	26	447,599	2.2
1993	187,229	5,186	46,015	5,688	114,817	35,842	45,256	444	10,769	199,820	191	278	27,883	5,350	0	0	497,539	2.7
1994	221,675	1,417	10,206	6,322	23,167	90,488	17,439	44	25,603	293,322	80	0	6,069	968	0	0	475,125	2.1
1995	203,659	233	3,020	3,340	3,349	179,562	24,492	0	13,017	251,855	0	254	14,264	307	247	20	493,960	2.4
1996	235,727	277	1,972	6,536	1,335	35,606	4,057	0	15,478	88,856	121	1	4,856	2,282	0	1,500	162,877	0.7
1997	230,793	0	347	0	916	2,842	11,901	0	1,932	129,206	1,984	130	8,502	17,554	1,942	0	177,256	0.8
1998	171,214	0	0	89	0	2,511	13,979	0	3,281	219,890	25,325	0	13,190	890	0	0	279,155	1.6
1999	210,016	0	279	2,323	672	80,315	15,939	0	20,091	313,886	19	346	40,906	5,360	465	9	480,610	2.3
2000	176,783	96	34,433	5,197	36,394	122,248	4,045	98	30,388	181,491	0	31	16,677	986	187	165	432,436	2.4
2001	74,408	0	522	215	1,701	5,696	8,310	0	7,078	77,172	0	78	9,900	300	0	0	110,971	1.5
2002	150,349	411	2,421	3,965	7,179	94,543	8,085	0	21,609	95,473	0	0	13,730	0	0	235	247,650	1.6
2003	200,894	43	888	1,667	337	51,307	7,446	0	16,131	256,511	0	357	15,308	548				
2004	177,108	669	5,264	1,535	24,845	99,160	7,094	0	29,761	255,957	181							
2005	156,401	139	2,828	2,423	3,067	20,933	20,082											
2006	153,153	0	931	1,561														
2007	149,709	218																
2008	184,856																	
2009	161,736																	

10-Year Average (1993-2002): 335,758 1.8

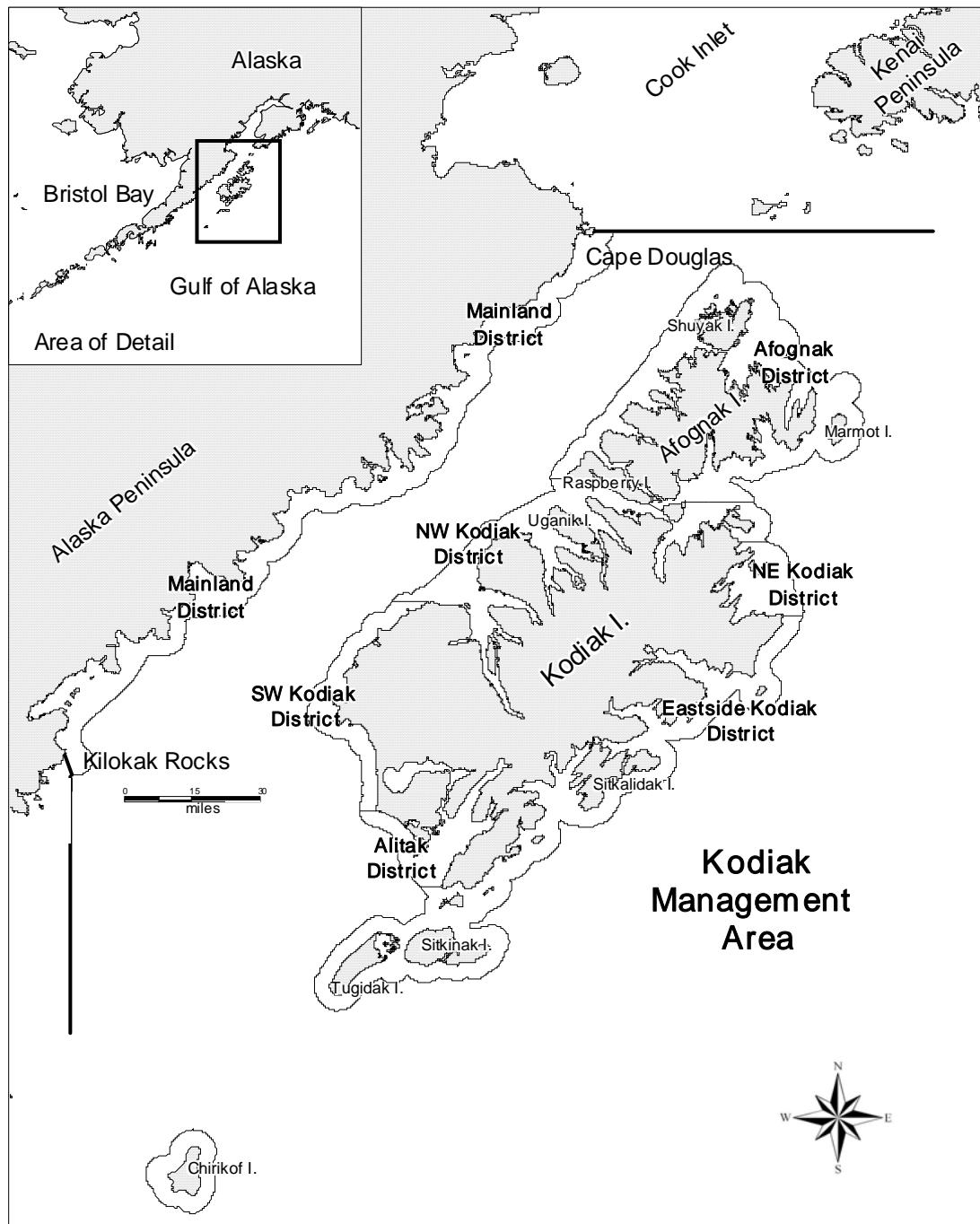


Figure 1.—Kodiak Management Area commercial salmon fishing districts.

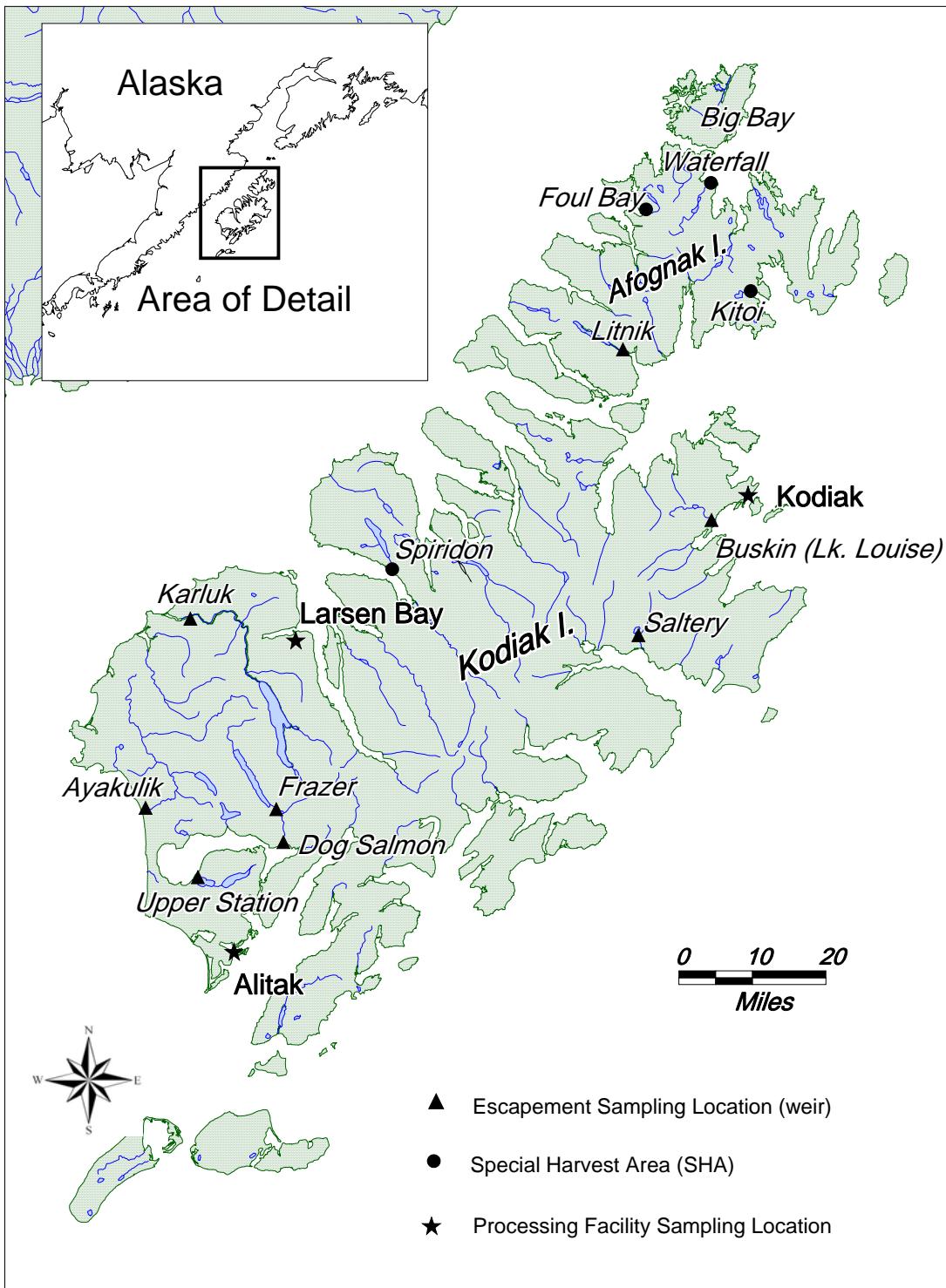


Figure 2.—Salmon escapement, special harvest areas, and processing facility sampling locations in the Kodiak Management Area, 2009.

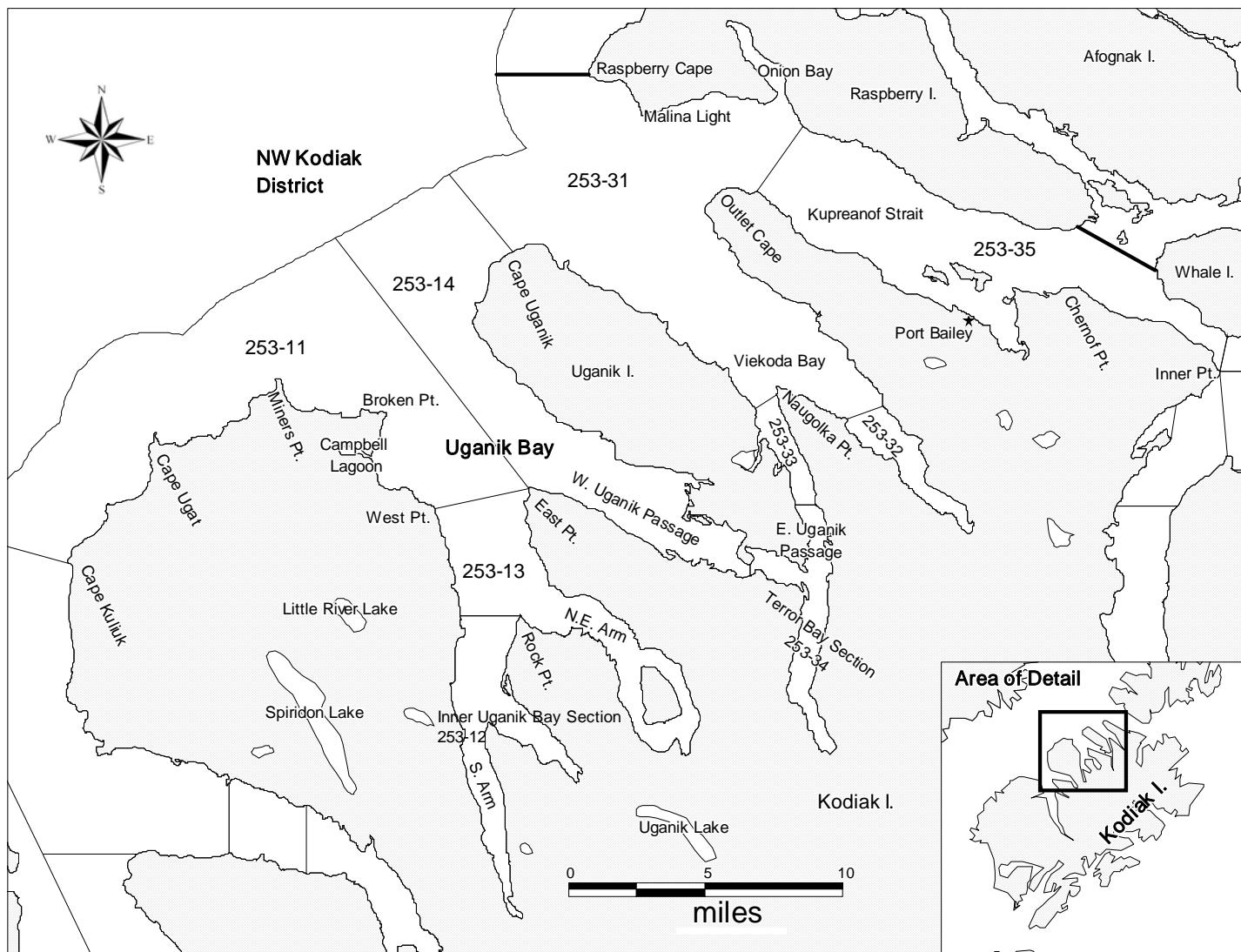


Figure 3.—Kodiak Management Area commercial salmon statistical areas sampled to represent Uganik/Viekoda/Kupreanof harvest within the Northwest Kodiak District.

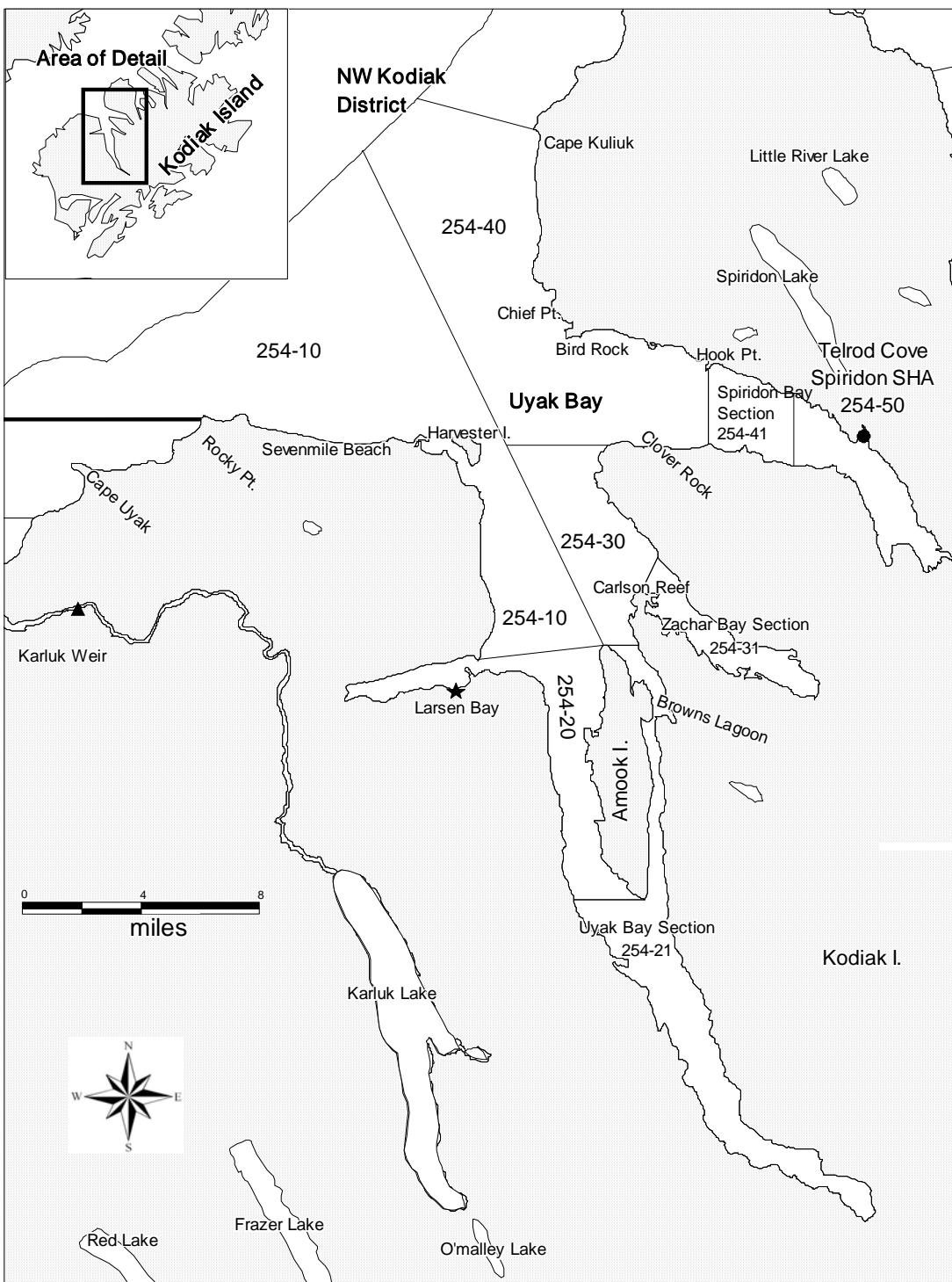


Figure 4.—Kodiak Management Area commercial salmon statistical areas sampled to represent Uyak Bay harvest within the Northwest Kodiak District.

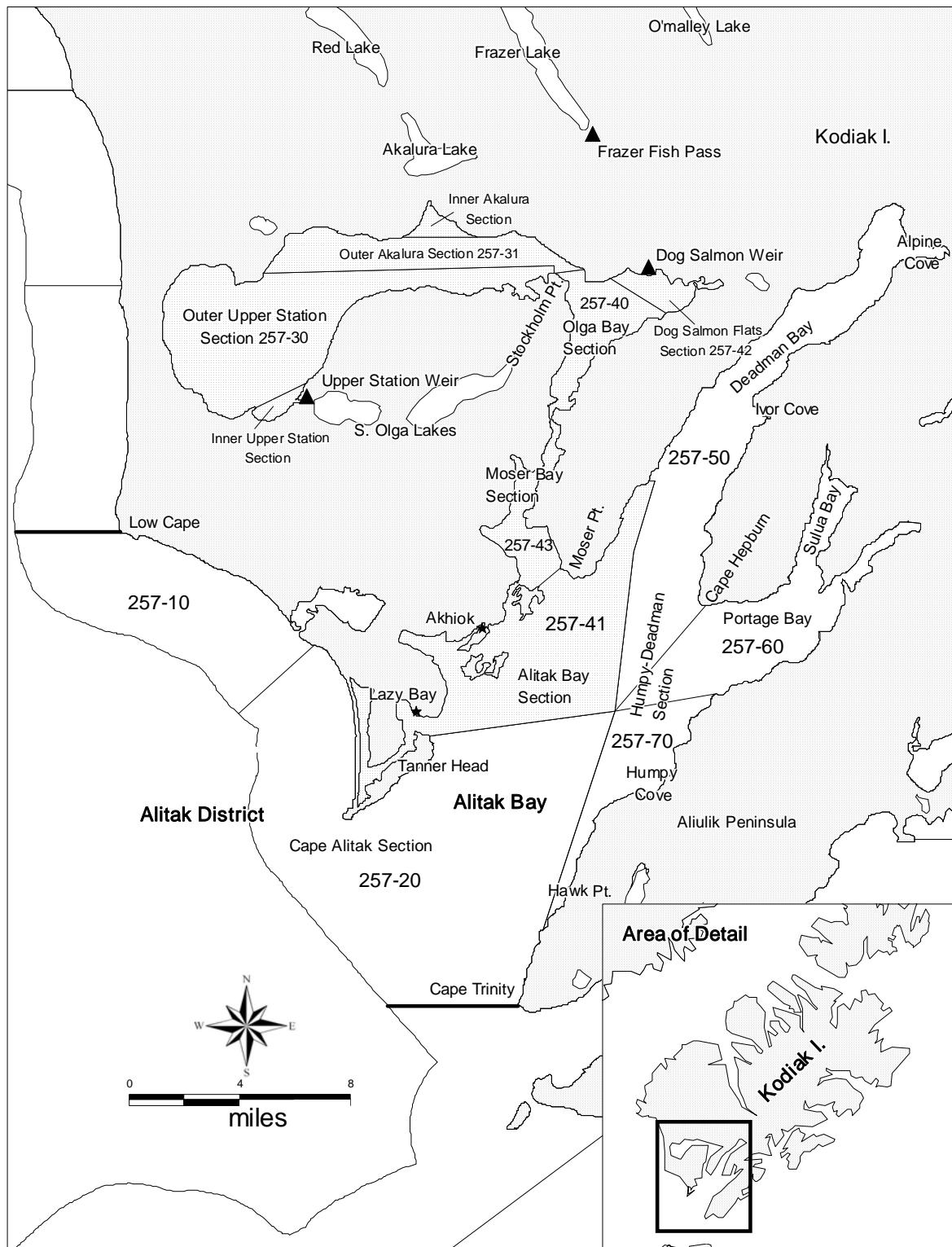


Figure 5.—Kodiak Management Area commercial salmon statistical areas sampled to represent Moser/Olga gillnet (dotted) and Alitak seine area harvest.

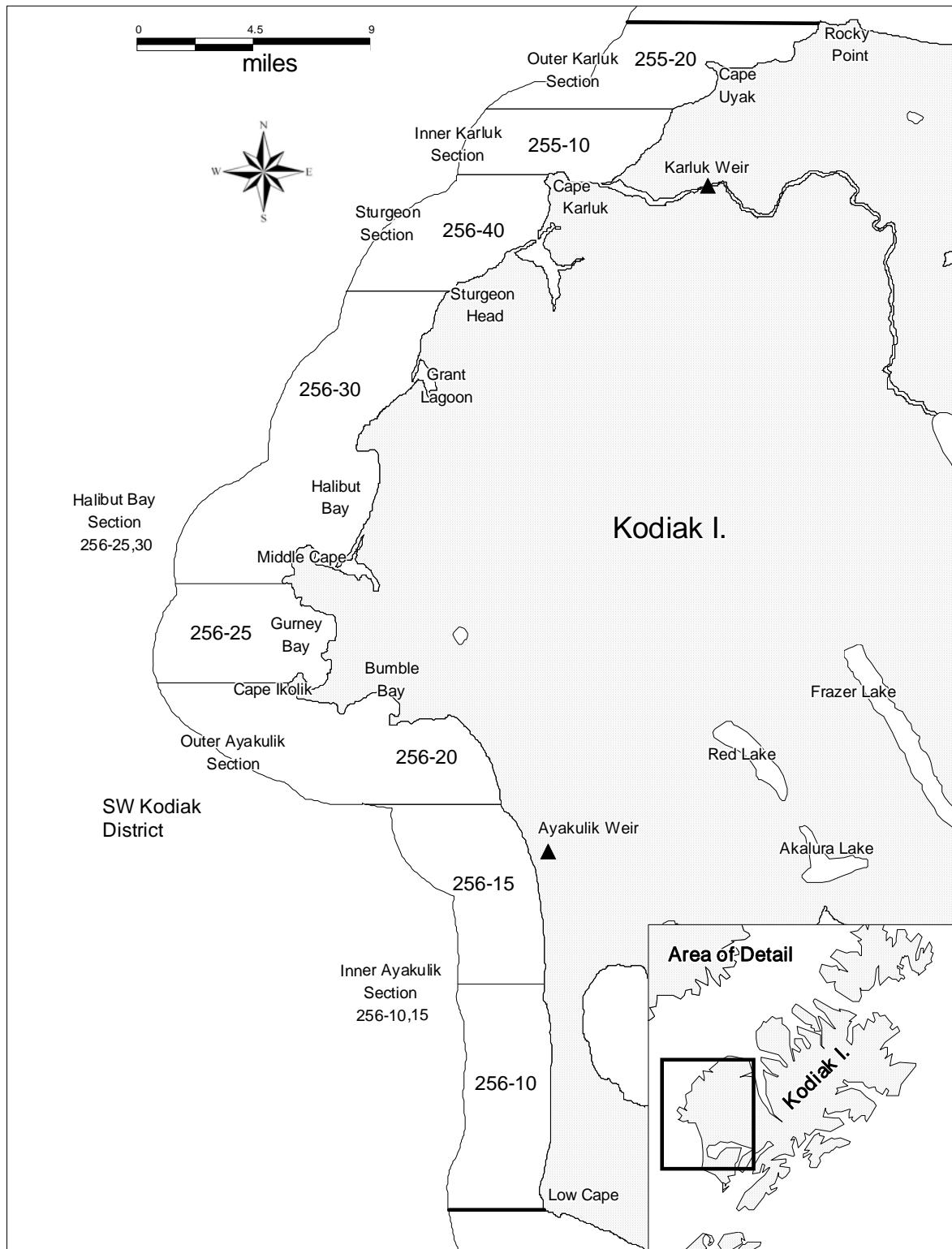


Figure 6.—Kodiak Management Area commercial salmon statistical areas sampled to represent the Southwest Kodiak District (Karluk/Sturgeon, Halibut/Gurney bays, and Ayakulik areas) harvests.

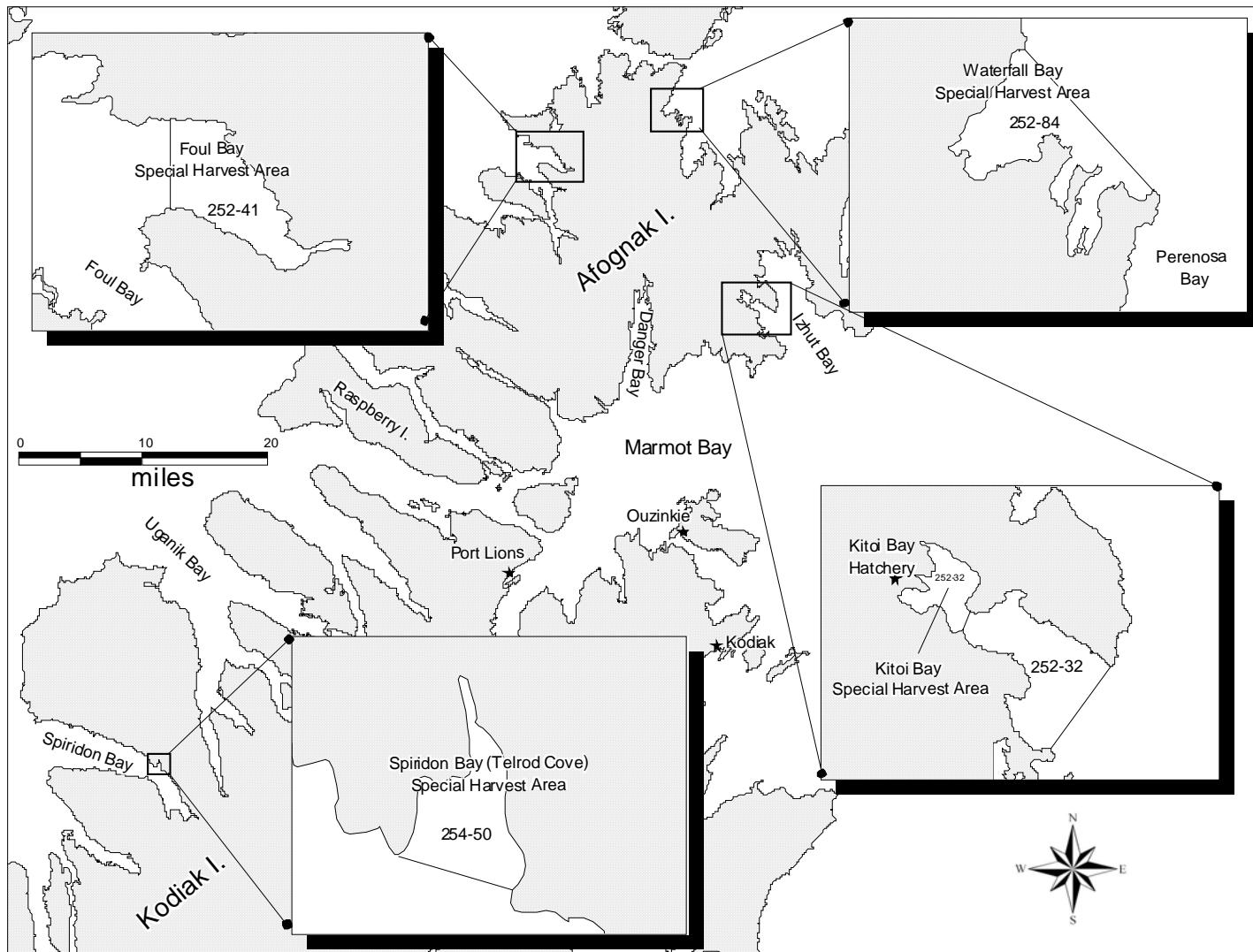


Figure 7.—Kodiak Management Area commercial salmon statistical areas sampled to represent Special Harvest Areas (SHA) at Waterfall, Foul, Kitoi, and Spiridon bays.

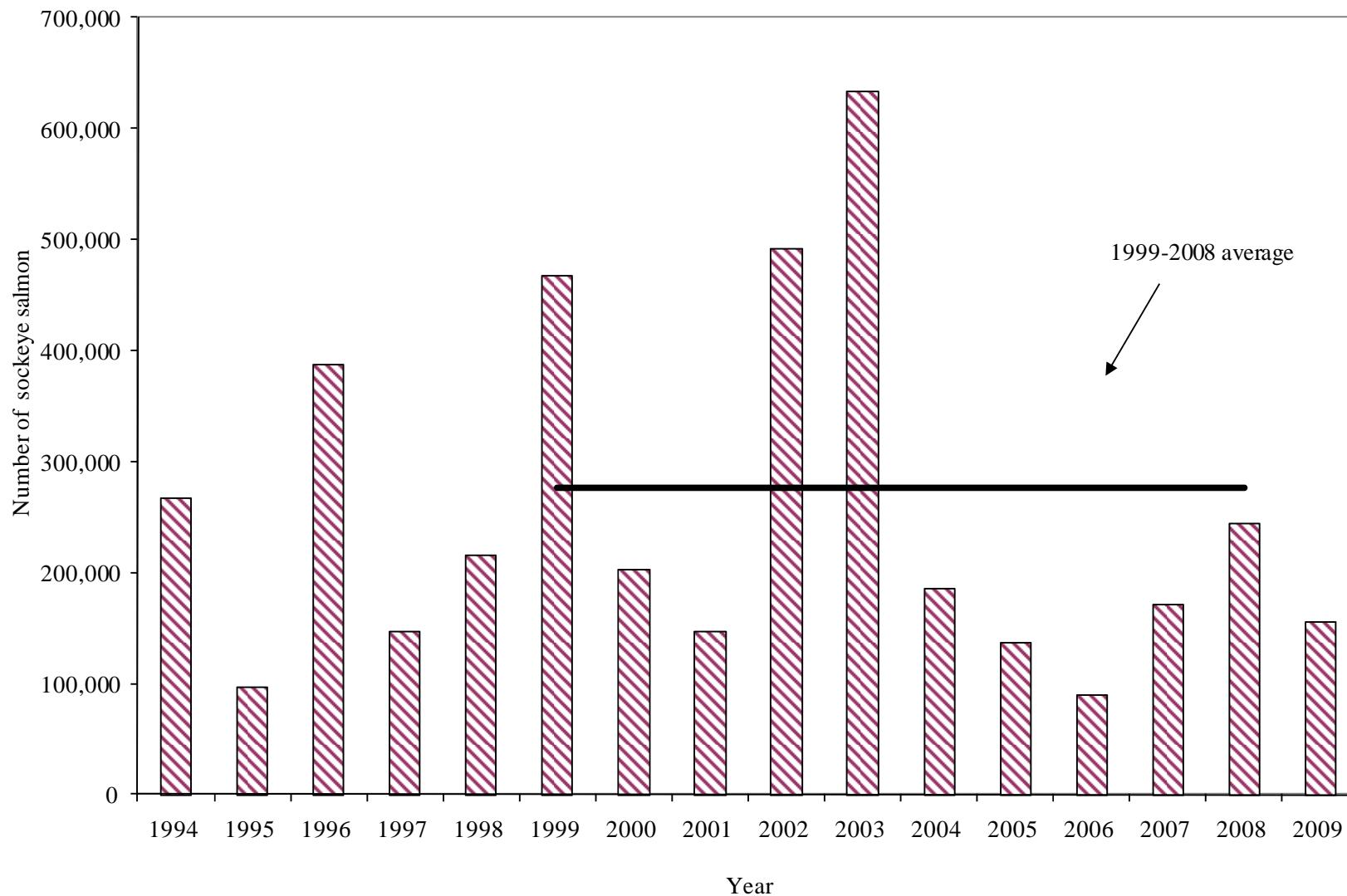


Figure 8.—Spiridon Lake (SBSHA) sockeye salmon total run estimates, 1994-2009, and the recent 10-year average estimated run (1999-2008).

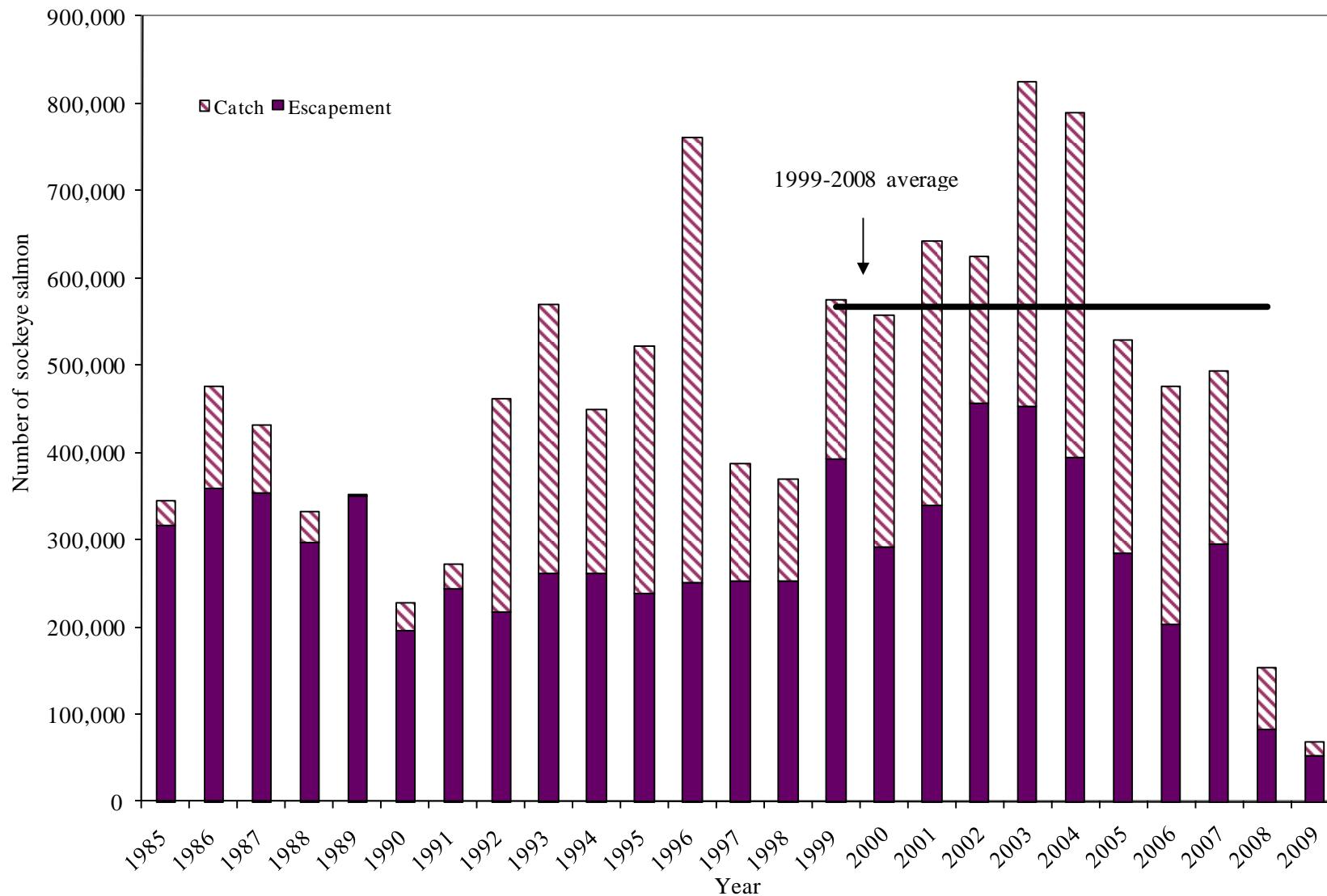


Figure 9.—Karluk Lake early-run sockeye salmon escapement and catch estimates, 1985–2009, and the recent 10-year average estimated total run (average catch and escapement combined, 1999–2008).

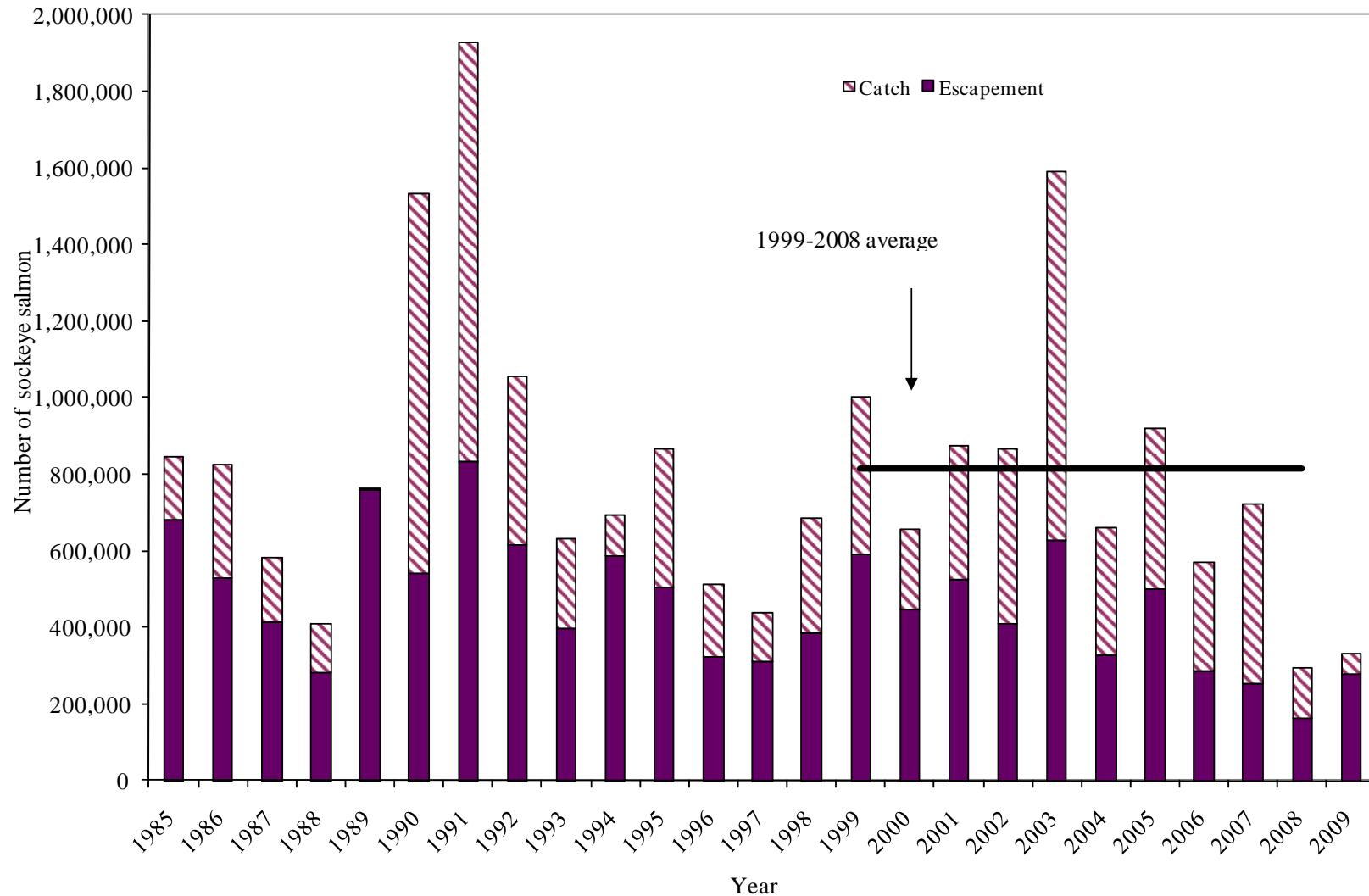


Figure 10.– Karluk Lake late-run sockeye salmon escapement and catch estimates, 1985-2009, and the recent 10-year average estimated total run (average catch and escapement combined, 1999-2008).

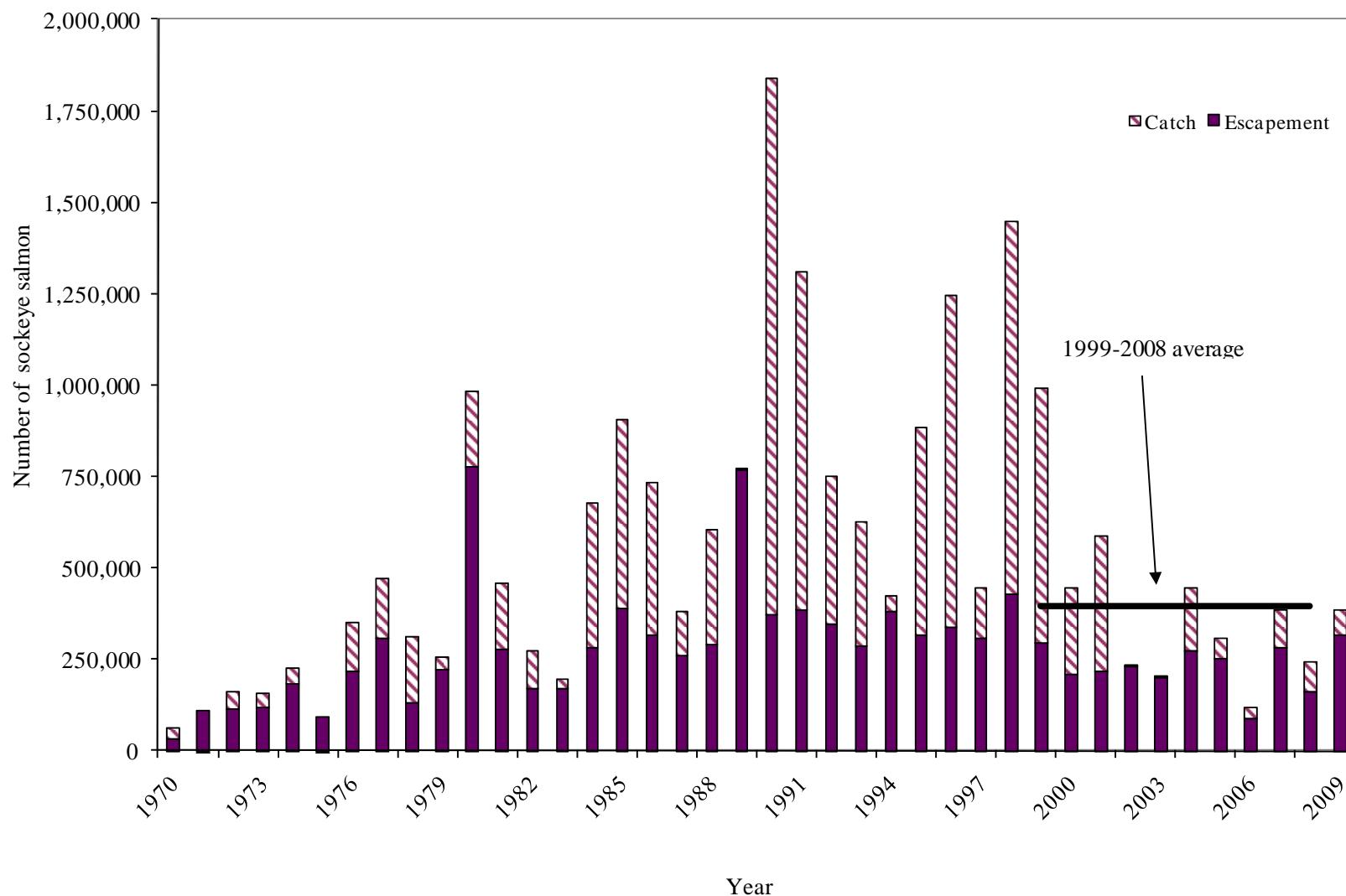


Figure 11.– Ayakulik River (Red Lake) sockeye salmon escapement and catch estimates, 1970-2009, and the recent 10-year average estimated total run (average catch and escapement combined, 1999-2008).

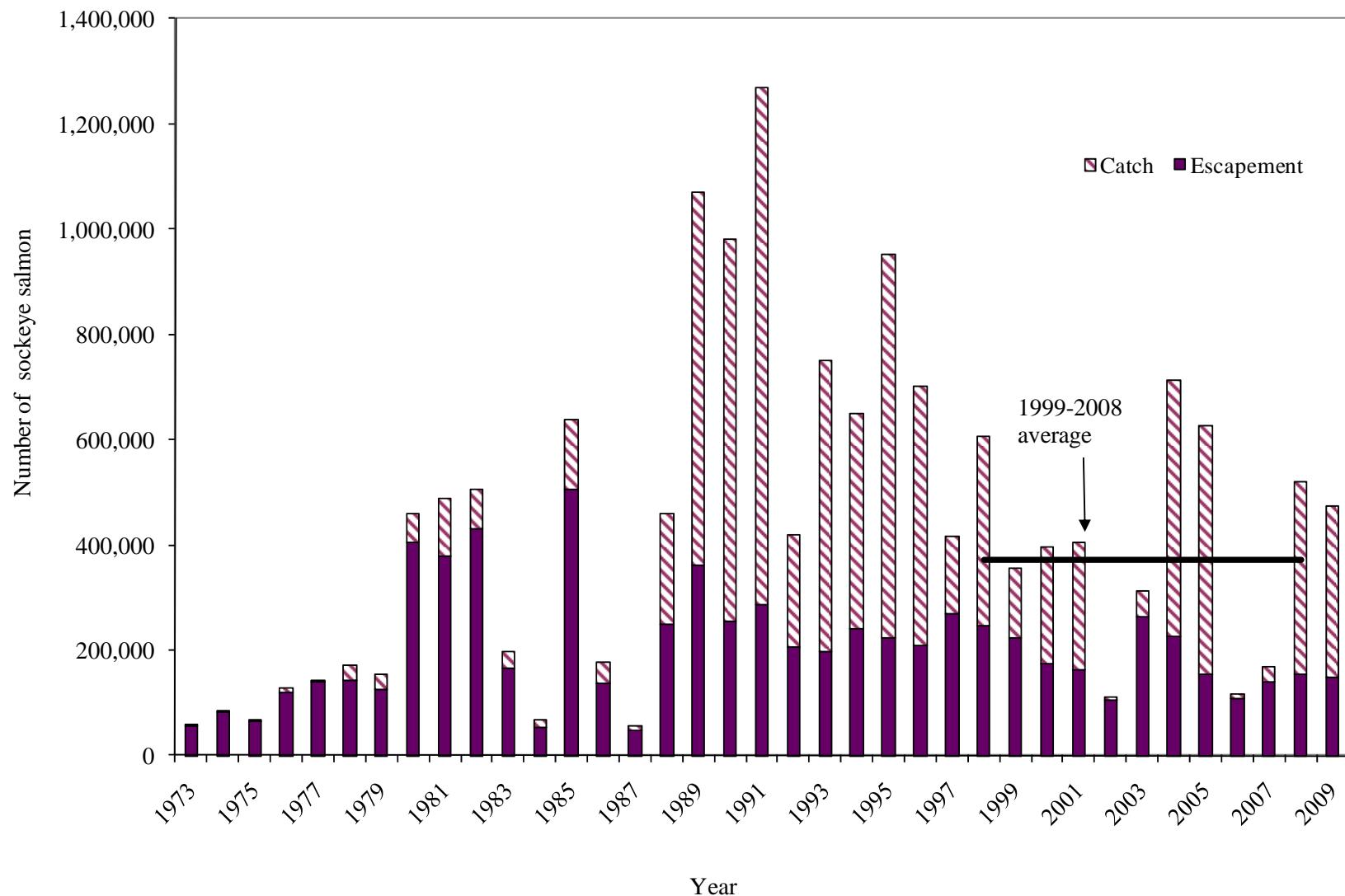


Figure 12.– Frazer Lake sockeye salmon escapement and catch estimates, 1973–2009, and the recent 10-year average estimated total run (average catch and escapement combined, 1999–2008).

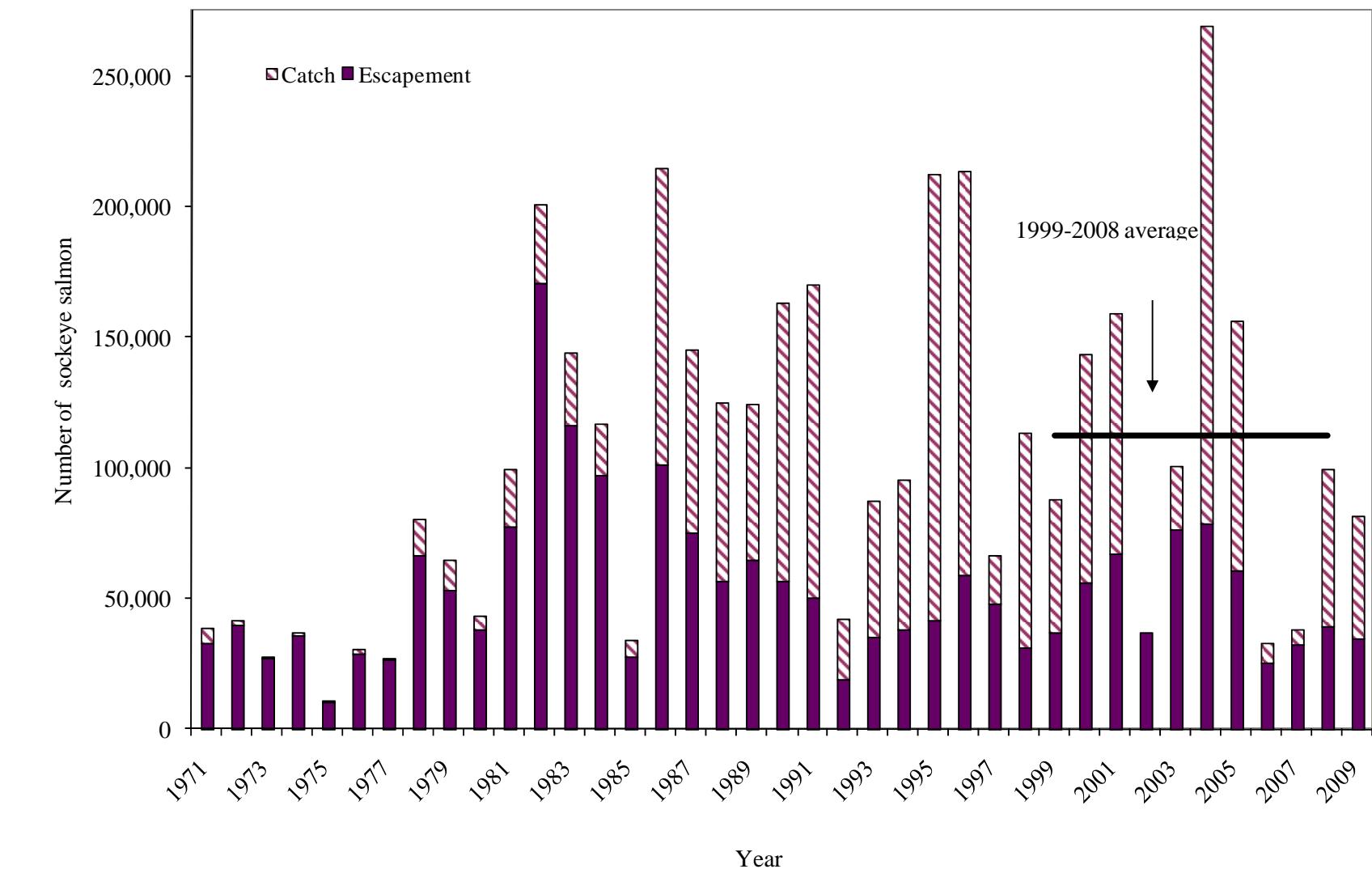


Figure 13.– South Olga Lakes (Upper Station) early-run sockeye salmon escapement and catch estimates, 1971–2009, and the recent 10-year average estimated total run (average catch and escapement combined, 1999–2008).

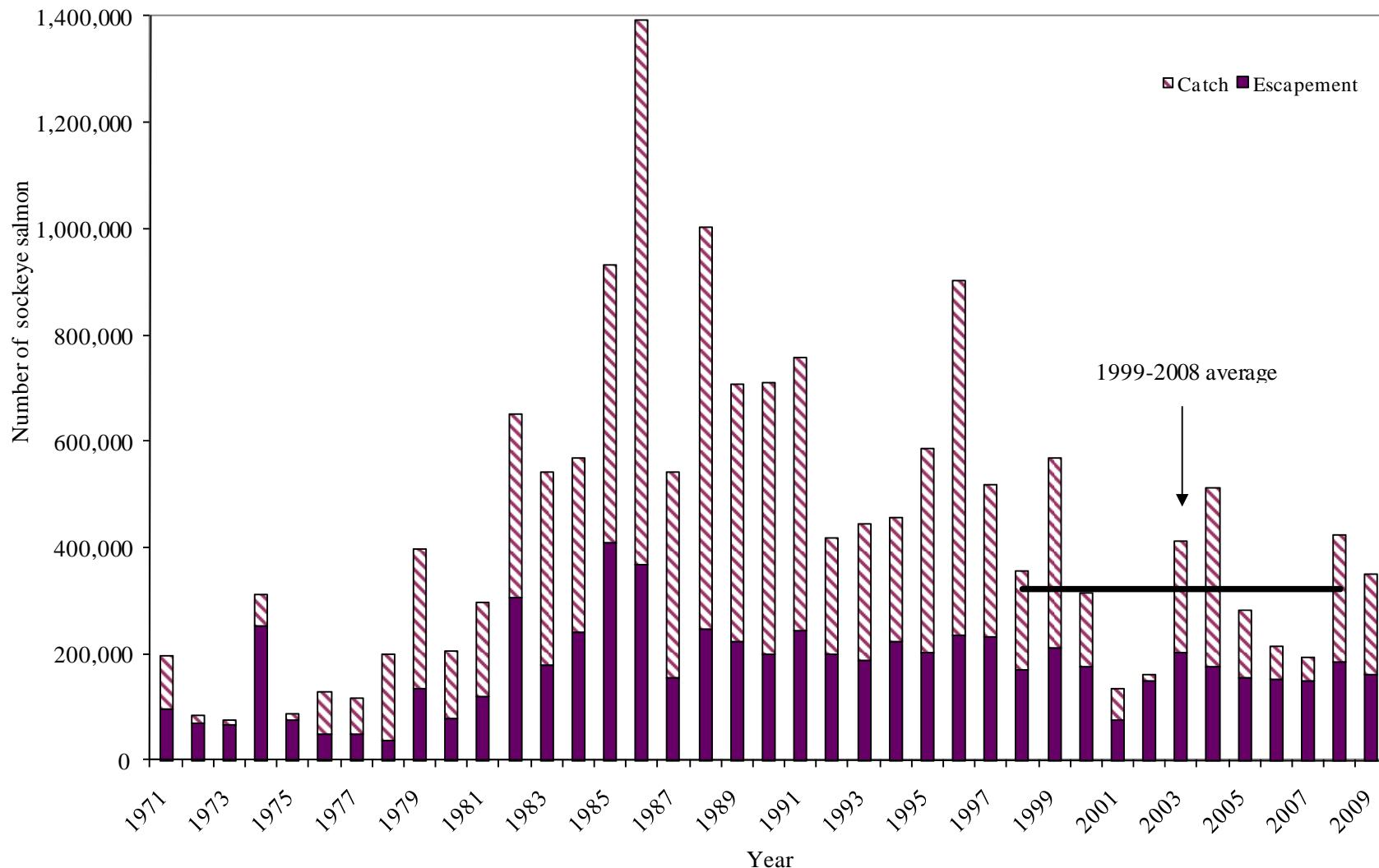


Figure 14.– South Olga Lakes (Upper Station) late-run sockeye salmon escapement and catch estimates, 1971-2009, and the recent 10-year average estimated total run (average catch and escapement combined, 1999-2008).

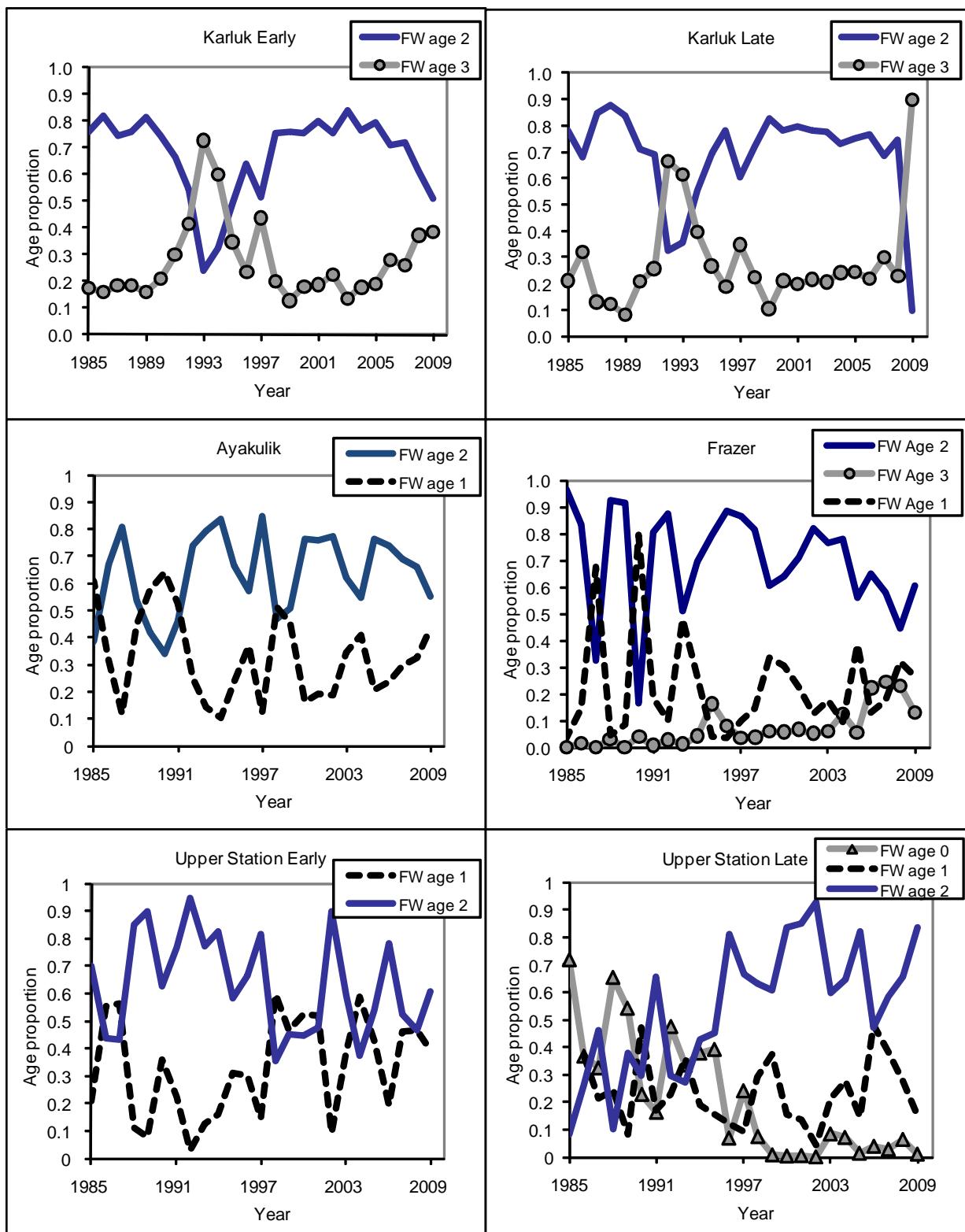


Figure 15.—Historical trends in the proportion of freshwater ages comprising the major Kodiak Island sockeye salmon annual runs 1985 to 2009.

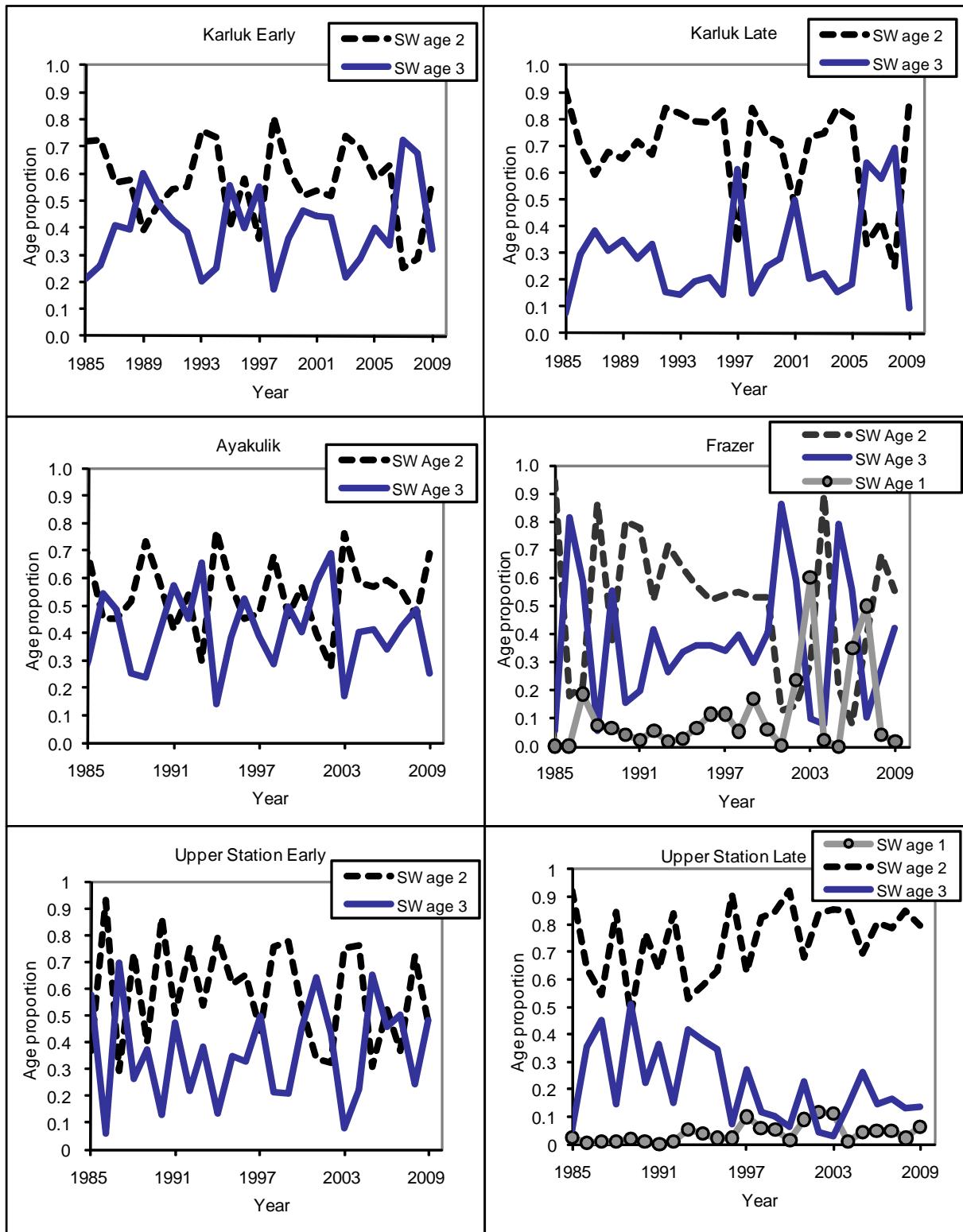


Figure 16.—Historical trends in the proportion of saltwater ages comprising the major Kodiak Island sockeye salmon annual runs 1985 to 2009.

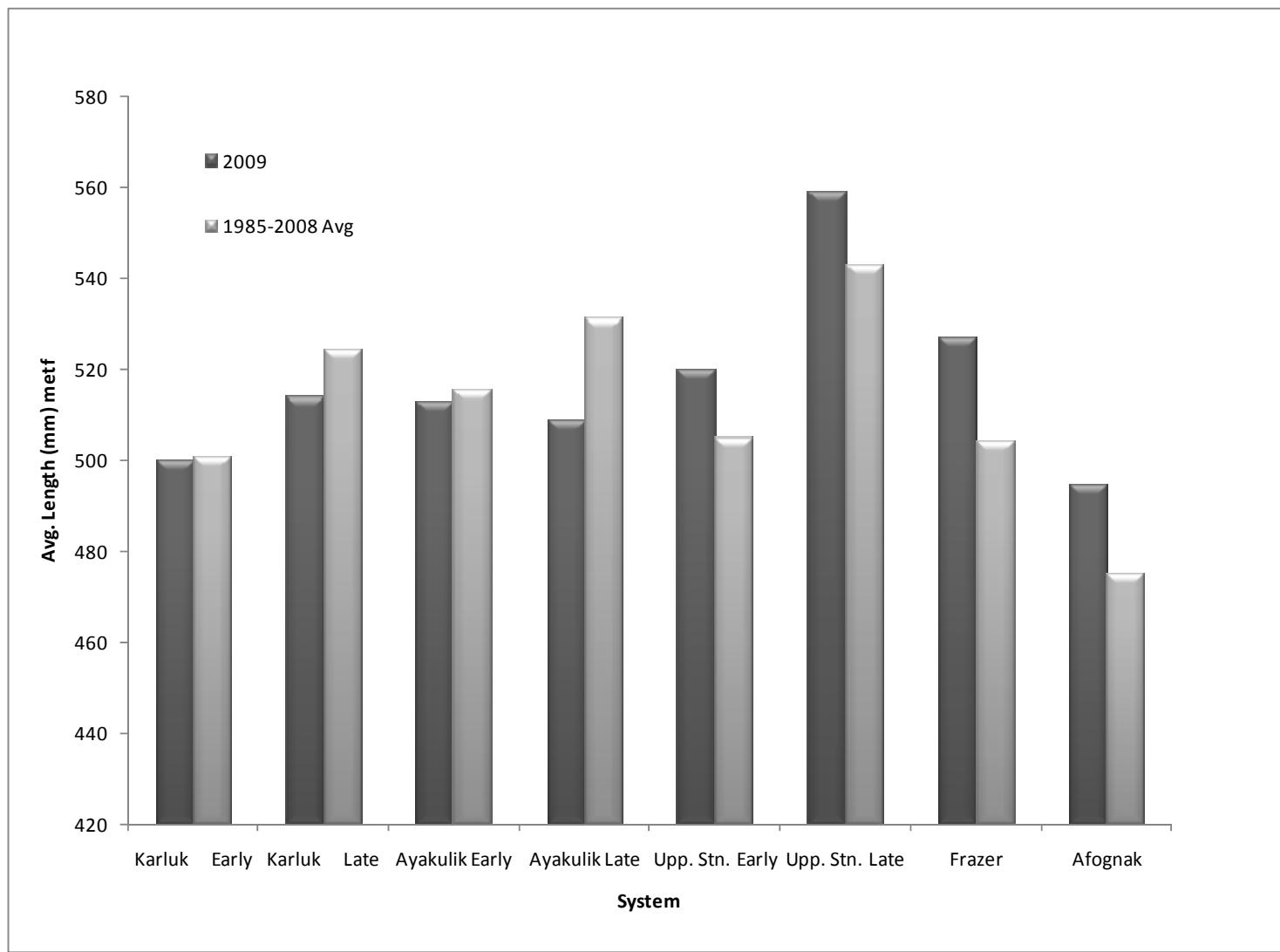


Figure 17.—Average size age-2.2 sockeye salmon by system, 2009 and historical average 1985 to 2008.